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Welcome to ESE Dublin 2007

Dear Colleagues,

I would like to welcome you all to the ESE meeting in Dublin. As you can see from the program we are very fortunate that so many of the leaders in esophagology in Europe have agreed to participate in this meeting. While no program can hope to cover all the key issues the current assembly of speakers will be sure to cast new light on the current hottest topics. The program has been drafted and redrafted and will no doubt be revised again before the day of the meeting, reflecting the dynamics of medical practice for people with busy schedules.

The free paper session reflects the industry of the young researchers working at the cutting edges of discipline. Many of these papers will be published in high impact journals and it is my hope that the discussion around their presentation will enhance any subsequent publication. And the sponsors will no doubt bring their latest prescriptions and devices for all to update on.

And while you are in Dublin be sure to take time to enjoy some of the sights and sounds, the music and the food, the conversation and the craic. If you have a little more time you might travel further afield to places like Glendalough in Wicklow, an interesting site of monastic learning; or to Newgrange in Co Meath, a fascinating archaeological and astronomical site that accurately identifies the winter solstice and is older than the pyramids, and there are many more places of interest in Dublin and in the surrounding countryside.

Enjoy the meeting and enjoy your stay in Dublin,

Kind regards,

Thomas N Walsh
Congress President

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Cambridge – UK

Fuchs, Karl H.
Frankfurt – Germany

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Griffin, Michael
Newcastle-upon-Tyne, UK

Hölscher, Arnulf H.
Cologne – Germany

Horvath, Peter Ors
Pecs – Hungary

Jankowski, Janosz
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Labenz, Joachim
Dresden – Germany

Lerut, Toni
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Lille – France

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Rotterdam – The Netherlands

Triboulet, Jean-Pierre
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Tytgat, GN
Amsterdam, The Netherlands

Van Lanschot, Jan
Rotterdam – The Netherlands

Walsh, Thomas N
Dublin – Ireland

Zaninotto, Giovanni
Padua – Italy

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INVITED SPEAKERS PROGRAMME

THURSDAY 2.00 – 5.00 Minimising the Morbidity of Oesophageal Resection

Chairs: Prof TN Walsh Prof G O'Sullivan

- 14:00 Evolution of surgical treatment: Has morbidity been reduced; has survival been increased?
Ruol Alberto Padova - Italy
- 14:30 Thoracoscopic esophagectomy: when and how?"
Bonavina Luigi Milan - Italy
- 15:00 Thoracoscopic or Laparoscopic Esophageal Resection
Mendes de Almeida JC Lisbon - Portugal
- 15:30 Thoracoscopic Esophagectomy in Prone Position
Nieuwenhuijzen, Grard Eindhoven, Netherlands
- 16:30 Laparoscopic mobilisation of the stomach for esophageal replacement.
Hölscher, Arnulf H Cologne - Germany
- 17:00 Laparoscopic or Open Gastropasty During Transthoracic Esophagectomy
Rosati, Riccardo Milan - Italy

FRIDAY 08:30 – 10:30 Transoral Intraluminal Therapy for GERD Symposium

Chair: Dr S Pachett

- 08:30 Transoral Intraluminal Therapy for GERD.
Bouvy, Nicole Maastricht - The Netherlands
- 10:00 **COFFEE**

FRIDAY 10:30 – 12:30 Barrett's Oesophagus

Chairs: Prof SM Griffin Prof T Lerut

- 10:30 Molecular Insights into Barretts Oesophagus.
Fitzgerald, Rebecca C Cambridge - UK
- 10:45 New Insights on the Origin of Barrett's Oesophagus.
Pera, Manuel Barcelona - Spain
- 11:00 Animal models of Barrett's and Cancer
Attwood, Stephen Teeside - UK
- 11:30 Molecular Insights into the Inflammation to Adenocarcinoma Sequence in the Oesophagus"
Reynolds, John Dublin - Ireland
- 11:45 Endoscopic Detection and Diagnosis.
Tytgat, GN Amsterdam, Netherlands
- 12:00 Invasive cancer is a failure of Barrett's surveillance?
Stuart, Robert Glasgow - UK
- 12:15 **LUNCH**

FRIDAY 14:00 – 17:30 Oesophageal Cancer - I

Chairs: Prof M Pera Prof E Ancona

- 14:00 Staging oesophageal gastric cancer – how far do we need to go?
Alderson, Derek Birmingham - UK

- 14:15 Lymph node metastases in early squamous and adenocarcinoma.
Hoelscher, Arnulf H Cologne - Germany
- 14:30 Sentinel node and nodal metastasis in T1 ACA Oesophagus.
Griffin, Michael Newcastle-upon Tyne - UK
- 14:45 Predicting Long Term Survival in Patients with Esophageal Adenocarcinoma.
Van Lanschot, Jan Rotterdam - The Netherlands
- 15:00 Role of Surgery Alone in Oesophageal Cancer.
Lerut, Toni Leuven - Belgium
- 15:15 The role of Chemoradiotherapy in Oesophageal Cancer.
Walsh, Thomas N Dublin - Ireland
- 15:30 Non-responder to RCT: Who Will Benefit from Surgery?
Triboulet, Jean-Pierre Lille - France
- 15:45 **COFFEE**

Oesophageal Cancer - II

Chairs: Prof D Alderson Prof J van Lanschot

- 16:15 Achalasia medical management 2007
Boeckxstaens Guy Amsterdam - The Netherlands
- 16:30 Treatment of Squamous Cell Carcinoma of the Pharyngoesophageal Junction?
Mariette, Christophe Lille - France
- 16:45 Postoperative complications and mortality: Lessons learned in 1500 patients.
Tilanus, Hugo Rotterdam - The Netherlands
- 17:00 Reoperative Oesophageal Surgery.
Fuchs, Karl H Frankfurt - Germany
- 17:15 Two- and multistage esophageal reconstruction after emergency esophagectomies
Horvath, Peter Ors Pecs - Hungary
- 17:30 **The Tom Hennessy Lecture** Cancer Management in the Future.
O'Sullivan, Gerald C Cork - Ireland
- 18:15 **General Assembly**

SATURDAY 08:30 – 10:30 GERD

Chairs: Prof JM Collard Prof H Stein

- 08:30 Diagnosing GERD in 2007: pH, Impedance Monitoring, Wireless pH Monitoring?
Bredenoord, Albert Utrecht - The Netherlands
- 08:45 GERD and FLIP technology.
McMahon, Barry Dublin - Ireland
- 09:00 From Reflux Event to Symptoms: New Insights in Reflux Composition, Stress, and Mucosal Resistance.
Sifrim, Daniel Leuven - Belgium
- 09:15 GERD is a Progressive Entity?"
Quigley, Eamonn Cork - Ireland
- 09:30 Evolution of GERD Therapy.
Tack, Jan Leuven - Belgium

- 09:45 **Helicobacter Pylori and GERD: Culprit or Innocent Bystander?**
Colm O'Morain Dublin - Ireland
- 10:00 Laparoscopic Nissen versus Esomeprazole.
Lundell, Lars Stockholm - Sweden
- 10:15 Evaluation of total fundoplication by mean of combined mano-impedance.
Del Genio, Alberto Naples - Italy
- 10.30 **COFFEE**

SATURDAY 11:00 – 13:00 Esophagology in General

Chairs: **Dr H Holloway Prof Lars Lundell**

- 11:00 Duodenal Switch for duodeno-gastric reflux.
Collard, Jean-Marie Brussels - Belgium
- 11:15 Boerhaaves Syndrome.
Salo, Jarmo Helsinki - Finland
- 11:30 Corrosive Injury to the Upper GI Tract.
Horvath, Peter Ors Pecs - Hungary
- 11:45 Eoisinophilic Esophagitis.
Farrell, Richard Dublin - Ireland
- 12:00 New techniques for the diagnosis of esophageal motility disorders.
Smout, Andre Utrecht - The Netherlands
- 12:15 Long term results following Achalasia treatment.
Mattioli, Sandro Bologna - Italy
- 12:30 Laparoscopic Heller myotomy for esophageal achalasia: Lessons learnt.
Zaninotto, Giovanni Padua - Italy

Oesophageal Cancer – III

Chairs: **Prof G Zaninotto Dr R Farrell**

- 12:45 Stem Cell Biology in Barretts Oesophagus.
Jankowski, Janusz Oxford - UK
- 13.00 Metabolic Response on PET Scanning as a Predictor of Response to Chemotherapy in Esophageal Cancer.
Ott Katja Munich - Germany
- 13:15 Neoadjuvant RCTX v. definitive RCTx for esophageal SCC.
Stein, Hubert J Salsburg - Austria
- 13.30 Close of Meeting**

MEETING PROGRAMME

Friday 14 September 2007

11:00–12:30: I. GERD

1.

11:00: Study of the Proliferative Effect of Acid Suppression in a Duodenal Reflux Animal Model

*Ayman Nasr^{2, 1}, Paul Dawney², Adrian Ireland¹, Eamon Leen^{2, 1}, David Bouchier-Hayes^{2, 1}, Thomas Walsh^{2, 1}
Department of Surgery¹, Royal College of Surgeons, Dublin, Ireland. Department of Surgery², Connolly Hospital
Blanchardstown, Dublin, Ireland*

2.

11:10: A Model Of Reflux-Induced Esophageal Carcinogenesis In The Rat

*Daniela Segat², Emanuela Dazzo², Giuseppe Ingravallo⁵, Massimo Rugge^{1, 4}, Maurizio David Baroni², Giovanni Zaninotto³, Ermanno Ancona^{3, 4}
Departments of Surgical and Gastroenterological Sciences¹, Biology², Pathology³, Padua University, Padua, Italy.
Istituto Oncologico Veneto⁴, Padua, Italy. Department of Pathology⁵, Bari University, Bari, Italy*

3.

11:20: 96-Hour Bravo® pH Monitoring Increases Detection Accuracy For Abnormal Esophageal Acid Exposure

*Giuseppe Portale, Giovanni Zaninotto, Mario Costantini, Sabrina Rampado, Christian Rizzetto, Emanuela Guirrolì,
Martina Ceolin, Ermanno Ancona
Gastroenterological and Surgical Sciences, Clinica Chirurgica III, Padova, Italy*

4.

11:30: Male Sex And Increased Gastro-Esophageal Pressure Gradient Are The Major Determinants Of Gastroesophageal Reflux Disease In Morbidly Obese Patients

*Fernando Fornari³, Carlos Augusto Scussel Madalosso³, Luiz Fernando Madalosso³, Placido Jose Scusse³, Richard Ricachenevsky Gurski³
Esophageal Physiology¹, ENDOPASSO, Passo Fundo, Rio Grande do Sul, Brazil. Bariatric Surgery²,
GASTROBESE, Passo Fundo, Rio Grande do Sul, Brazil. Post-Graduation in Surgery³, Universidade Federal do Rio
Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*

5.

11:40: Nocturnal Non-Acid Gastroesophageal Reflux

*Fernando Fornari, Kathleen Blondeau, Jan Tack, Daniel Sifrim
Gastroenterological Research, Catholic University of Leuven, Belgium*

6.

11:50: The Effect Of Antireflux Surgery on Barrett's Esophagus

*Martina Ceolin¹, Emanuela Guirrolì¹, Christian Rizzetto¹, Mario Costantini¹, Cristina Silvestre¹, Lisa Zanatta¹,
Giovanni Zaninotto¹, Massimo Rugge²
Surgical and Gastroenterological Sciences¹, Clinica Chirurgica III and Istituto Oncologico Veneto² – IRCCS,
University of Padua, Padova, Italy*

7.

12:00: Endoluminal Fundoplication (Elf) For Gerd–Short Term Results

*R. Rosati¹, U Fumagalli¹, R Barbera², A Malesci², A Repici²
¹General and Minimally Invasive Surgery and ²Gastroenterology–Istituto Clinico Humanitas–Via Manzoni, 56–20089
Rozzano, Italy*

8.

12:10: EsophyX™ Device. A New Technique For Flexible Endoscopic Intraluminal Fundoplication For The Treatment Of Gastro-Esophageal Reflux Disease (GERD)

*BPL Witteman³, E de Vries³, FHM Nieman³, W Hameeteman³, RM van Dam³, JW Greve³, GH Koek³, ND Bouvy³
Surgery¹, Epidemiology², University Hospital Maastricht and Gastroenterology³, Hospital Maastricht, Maastricht,
The Netherlands*

9.

12:20: Gastroesophageal Reflux And Detection Of Pepsin And Bile Acids In Balf In Lung Transplant Recipients With Or Without Chronic Rejection

*V Mertens¹, K Blondeau¹, B Vanaudenaerde², DE Van Raemdonck², GM Verleden², LJ Dupont², D Sifrim¹
Gastroenterological Research¹ and Lung Transplantation, University Hospital Gasthuisberg, Leuven, Belgium*

10.**12.30:** GERD And Lung Transplantation: Prevalence And Possible Role In The Genesis Of Bronchiolitis Obliterans Syndrome

Martina Ceolin¹, Lisa Zanatta¹, Monica Loy², Giovanna Rizzardi², Christian Rizzetto¹, Francesca Lunardi³, Cinzia Giacometti³, Elena Finotti³

Surgical and Gastroenterological Sciences, Clinica Chirurgica III¹, Chirurgia Toracica², Human Pathology³ and Istituto Oncologico Veneto, IRCCS, University of Padua, Padova, Italy

14:00–15:00: II. Pathophysiology**11.****14.00:** Circulating Bone Marrow Derived Stem Cells In Reflux Oesophagitis, Barrett's Disease And Oesophageal Cancer

M. Atie¹, W Robb¹, P Naughton¹, D.B. Bouchier Hayes¹, T.N. Walsh¹

Departments of Surgery Connolly¹ Hospital, and Surgery and Beaumont Hospital², Dublin, Ireland

12.**14.10:** Single Nucleotide Polymorphisms and Susceptibility for Cancer of the Esophagus and the Gastro-Esophageal Junction

Jurjen Boonstra^{1, 2}, Linetta Koppert², Andre Uitterlinden³, Hugo Tilanus², Winand Dinjens¹

Pathology¹, Surgery² and Internal Medicine³, Erasmus MC, Rotterdam, The Netherlands

13.**14.20:** Does Altered Biliary Function Promote Esophageal Metaplasia/Neoplasia?

Ayman Nasr¹, Tarig Alhafez¹, David Boucheir-Hayes¹, Neil Hickey², Thomas Walsh¹

Department of Surgery¹ and Department of Radiology², Connolly Hospital Blanchardstown, Dublin, Ireland

14.**14.30:** Elevation of 8-hydroxydeoxyguanosine Indicates The Role Of Oxydative DNA Damage In The Carcinogenesis Of Barrett's Esophagus

Jari Räsänen, Eero Sihvo, Markku Ahotupa, Jarmo Salo

Cardiothoracic Surgery, Division of General Thoracic and Esophageal Surgery, Helsinki University Central Hospital, Helsinki, Finland

15.**14.40:** Molecular Analysis of Vitamin C Supplementation: Tissue NFkB And Cytokine Profile In Barrett's Oesophagus, Differential Response Following Treatment

Mahwash Babar, Aoife Murphy, Muhammad Abdel-Latif, Patrick Byrne, Miriam Byrne, Graham Pidgeon, Sinead Murphy, Ravi Narayasami

Department of Surgery, St. James's Hospital, Dublin, Ireland

16.**14.50:** Oral Immune Tolerance Mediated By Tregulatory Cells May Be Responsible For The Poorer Prognosis Of Foregut Cancers

Maria Whelan¹, Garrett Casey², Mark Tangney², John Larkin¹, Gerald C O'Sullivan^{1, 2}

Dept of Surgery¹ and Cork Cancer Research Centre², Mercy University Hospital, Cork, Ireland

15:00–15:50: III. Esophagology – General**17.****15.00:** Eosinophilic Oesophagitis: The Incidence And Patient Demographic In An Adult Population Undergoing Upper Endoscopy

Orlaith Kelly¹, Niall Swan³, Humphrey O' Connor², Prof Colm O' Morain¹

Gastroenterology, AMNCH, Dublin¹, Naas General Hospital², Naas, Co. Kildare, Pathology³, Ireland

18.**15.10:** Patients With Primary (Idiopathic) Achalasia Have Circulating Peripheral Blood Mononuclear Immune Cells That Are Hyper- Reactive To The Herpes- Simplex -1 Virus

KW Lau¹, C McCaughey², PV Coyle², LJ Murray¹, BT Johnston³

Centre for Clinical and Population Sciences, Queens University of Belfast¹, Virology², Gastroenterology³, Royal Victoria Hospital, Belfast, Northern Ireland, United Kingdom

19.

15.20: Reduction of interstitial cells of Cajal (ICC) associated with neuronal nitric oxide synthase (n-NOS) in patients with achalasia

I. Gockel¹, J.R.E. Bohl², V.F. Eckardt³, Th. Junginger¹

¹*Department of General and Abdominal Surgery, Johannes Gutenberg-University of Mainz, Germany*

²*Institute of Neuropathology, Johannes Gutenberg – University of Mainz, Germany*

³*Department of Gastroenterology, German Diagnostic Clinic, Wiesbaden, Germany*

20.

15.30: Laparoscopic Repair Of Large Hiatal Hernia: Comparison Of Three Different Techniques Of Mesh HiatoPlasty To Prevent Mesh Related Complications

Gabor Varga¹, Laszlo Cseke¹, Katalin Kalmar¹, Ors Peter Horvath¹

Surgery, Pécs University, Pécs, Hungary

21.

15.40: Esophageal Resection In Patients With Recurrent Achalasia Following Myotomy

Giuseppe Portale, Giovanni Zaninotto, Mario Costantini, Christian Rizzetto, Emanuela Guirrolì, Sabrina Rampado, Loredana Nicoletti, Ermanno Ancona

Gastroenterological and Surgical Sciences, Clinica Chirurgica III, Padova, Italy

16:15–17:30: IV. Staging and Treatment Strategies

22.

16.15: Diagnostic Strategy For Pretreatment Staging Of Patients With Esophageal Cancer

Mark van Heijl¹, Jikke MT Omloo¹, Mark I van Berge Henegouwen¹, Nico J Smits², Saffire SKS Phoa², Jacques JGHM Bergman³, Patrick MM Bossuyt⁴, J Jan B van Lanschot^{5, 1}

Departments of Surgery¹, Radiology², Gastroenterology³, Clinical Epidemiology, Biostatistics and Bioinformatics⁴, Academic Medical Centre at the University of Amsterdam, Amsterdam, Noord-Holland, and Surgery⁵, Erasmus Medical Centre, Rotterdam, Zuid-Holland, The Netherlands

23.

16.25: Prediction of Lymph Node Status in Superficial Esophageal Carcinoma

Sabrina Rampado¹, Massimo Rugge², Mauro Cassaro², Giorgio Battaglia³, Alberto Ruol¹, Carlo Castoro³, Giuseppe Portale¹, Ermanno Ancona³

Gastroenterological and Surgical Sciences, Clinica chirurgica III¹, Diagnostic Sciences and Special Therapies, Pathology section², Surgery, Istituto Oncologico Veneto³, Padova, Italy

24.

16.35: Neoadjuvant Chemoradiation In Oesophageal Carcinoma: Impact On The Lymph Node Status

Nicolas Briez¹, Guillaume Piessen¹, Emmanuelle Leteurtre², Jean-Pierre Triboulet¹ and Christophe Mariette¹

¹*Department of digestive and oncological surgery, ² Department of pathology, University Hospital Claude Huriez–Centre Hospitalier Régional Universitaire, Lille, France*

25.

16.45: Number and ratio of metastatic lymph nodes an independent prognostic factor regardless of neoadjuvant chemoradiation or lymphadenectomy extent

Guillaume Piessen¹, Nicolas Briez¹, Jean Pierre Triboulet^{1,2}, Christophe Mariette^{1,2}

¹*Department of Digestive and Oncological Surgery– University Hospital C Huriez – Centre Hospitalier Régional Universitaire and ²University of Lille II, Place de Verdun 59037 Lille cedex, France*

26.

16.55: Additional Value Of External Ultrasonography Of The Neck After Normal CT- and PET-Scanning In The Preoperative Assessment Of Patients With Oesophageal Cancer

Jikke MT Omloo¹, Mark van Heijl¹, Saffire SKS Phoa², Nico J Smits², Mark I van Berge Henegouwen¹, Gerrit W Sloof³, J Jan B van Lanschot^{4, 1}

Surgery¹, Radiology², Nuclear Medicine³, Academic Medical Centre, Amsterdam, The Netherlands. Surgery, Erasmus Medical Centre⁴, Rotterdam, The Netherlands

27.

17.05: Carcinoma Of The Hypopharynx And Cervical Esophagus: Is First Line Chemoradiation The Gold-Standard?

Silvia Michieletto, Alberto Ruol, Carlo Castoro, Matteo Cagol, Rita Alfieri, Gianpietro Zanchettin, Chiara Tosolini, Ermanno Ancona

IRCCS, Istituto Oncologico Veneto, Padua, Italy

28.

17.15: The Changing Use Of Palliative Chemotherapy For Recurrent Esophageal Cancer

Sunil Amonkar, T. Sriram, M. White, M. Irving¹, J. Wayman, S.M. Griffin¹, S.A. Raimes

Surgery, Northern Oesophago-Gastric Cancer Unit, Newcastle upon Tyne & Carlisle, United Kingdom

17:30: The TPJ Hennessy Lecture

Professor GC O'Sullivan

The Future of Oesophageal Cancer Treatment

18:30: General Assembly

Saturday 15 September 2007

09:00–10:15: V. Peri-operative Management

29.

09.00: The Influence Of Non-Intensive Care Management And Fluid Prescription On Post-Operative Morbidity In Esophagectomy

Mark Quinn, Conor J Shields, Patrick Broe

Department of Surgery, Beaumont Hospital, Dublin, Ireland

30.

09.12: Postoperative Pulmonary Morbidity following Esophagectomy is Decreased by Reducing the Perioperative Fluid Balance

Khe Tran¹, Jasper van Bommel², Marc Buijs², Diederik Gommers², Hugo Tilanus¹

Department of General Surgery¹ and Anaesthesiology², Erasmus Medical Centre Rotterdam, The Netherlands

31.

09.24: Thirty-Day Mortality After Esophageal Resection Is Reduced Following Introduction Of A Closed Format Intensivist Led ICU

Linetta Koppert^{1, 2}, Iwan Meynaar⁴, Michel Wouters³, Peter Tangkau⁴, Peter De Graaf², Tom Karsten², Ewout Steyerberg⁵, Laurents Stassen²

Surgery, Erasmus University Medical Center, Rotterdam¹, Surgery, Reinier de Graaf Hospital, Delft², Surgery, The Netherlands Cancer Institute, Antoni van Leeuwenhoek Hospital, Amsterdam³, Intensive Care Unit, Reinier de Graaf Hospital, Delft⁴, Public Health, Erasmus University Medical Center, Rotterdam⁵, The Netherlands

32.

09.36: Effects Of Neoadjuvant Therapy On Perioperative Morbidity In Elderly Patients Undergoing Esophagectomy For Esophageal Cancer

Giuseppe Portale¹, Alberto Ruol¹, Carlo Castoro², Vanna Chiarion Sileni³, Luigi Corti⁴, Caterina Boso⁴, Matteo Cagol², Ermanno Ancona²

Gastroenterological and Surgical Sciences, Clinica Chirurgica III¹, Surgery, Istituto Oncologico Veneto², Oncology, Istituto Oncologico Veneto³, Radiotherapy, Istituto Oncologico Veneto, Padova⁴, Italy

33.

09.48: Clinical Outcome Of Perioperative Enteral Immunonutrition For Patients Undergoing Subtotal Oesophagectomy

Javed Sultan², Filippo Di Franco², Peter Davis², YKS Viswanath², Shaun R Preston², Dayalan Karat², Nick Hayes², Michael Griffin²

Upper Gastrointestinal Surgery¹, Northern Oesophago-Gastric Cancer Unit, Royal Victoria Infirmary, Newcastle upon Tyne, Northumberland, UK and Surgery², James Cook University Hospital, Middlesbrough, Cleveland, UK

34.

10.00: Improvement Of Long-Term Survival After Centralisation Of Esophageal Cancer Surgery In A Population-Based Study

Leon van de Schoot¹, Lonneke V van de Poll -Franse², Jan-Willem Coebergh^{2, 4}, Jan A Roukema³, Harm J Rutten¹, Gerard AP Nieuwenhuijzen³

Surgery, Catharina Hospital, Eindhoven¹, Comprehensive Cancer Centre South (IKZ), Eindhoven², Surgery, St Elisabeth Hospital, Tilburg³, Public Health, Erasmus University Medical Centre, Rotterdam⁴, The Netherlands

11.00–12:36: VI. Surgery

35.

11.00: Outcome Of Esophagectomy For Cancer In A Consecutive Series Of 1879 Patients

Vera Rempe-Sorm, Linetta B. Koppert, Khe T.C. Tran, Conny Vollebregt, H.W. Tilanus

Surgery, Erasmus University Medical Centre, Rotterdam, The Netherlands

36.

11.12: Minimally Invasive Esophagectomy For Cancer: Results On 50 Consecutive Laparoscopic Gastric Mobilization

Stefano Santi, Paolo Parise, Valentina Radicchi, Biagio Solito, Mauro Rossi

Chirurgia Generale Iv, Azienda Ospedaliero Universitaria Pisana, Pisa, Italy

37.

11.24: The First Results Of Thoracoscopic Assisted Transhiatal Esophagectomy In Prone Position For Carcinoma Of The Esophagus

EAPM Romme, HJT Rutten, IHJT De Hingh, GAP Nieuwenhuijzen

Surgery, Catharina Hospital, Eindhoven, The Netherlands

38.

11.36: Clinical Impact Of Tumour Involvement Of The Proximal Anastomotic Doughnut In Oesophagogastric Cancer Surgery

Karim Sillah¹, Ewen Griffiths³, Sue Pritchard¹, Richard Page², Ian Welch¹

General Surgery¹, Histopathology², University Hospital of South Manchester, Manchester, General Surgery, Blackpool Victoria hospital, Blackpool, Lancashire³, United Kingdom

39.

11.48: Age Does Not Affect Outcome And Survival After Esophagectomy For Esophageal Cancer

Giuseppe Portale¹, Alberto Ruol¹, Carlo Castoro², Matteo Cago², Rita Alfieri¹, Sabrina Rampado¹, Silvia Michieletto¹, Ermanno Ancona²

Gastroenterological and Surgical Sciences, Clinica Chirurgica III¹, Surgery, Istituto Oncologico Veneto², Padova, Italy

40.

12.00: Locally Advanced Squamous Cell Cancer Of The Cervical Oesophagus: The Role Of Multimodal Therapy

A. Papp¹, L. Cseke¹, G. Pavlovics¹, R. Farkas², S. Márton³, G. Varga¹, L. Pótó⁴, O.P. Horváth¹

¹Department of Surgery, ²Department of Oncotherapy, ³Department of Anaesthesiology and Intensive Therapy,

⁴Institute of Bioanalysis, University of Pécs, Hungary

41.

12.12: Chylothorax After Transthoracic Esophagectomy For Cancer: The Role Of Prophylactic Thoracic Duct Ligation

Matteo Cago¹, Alberto Ruol², Carlo Castoro¹, Rita Alfieri², Silvia Michieletto², Chiara Tosolini², Gianpietro Zanchettin², Ermanno Ancona¹

IRCCS, Istituto Oncologico Veneto, Padua¹, Scienze Gastroenterologiche Chirurgiche, Clinica Chirurgica III2, Padua, Italy

42.

12.24: Comparable Mortality And Morbidity With Laparotomy Or Thoracolaparotomy In The Treatment Of Upper Third Gastric Cancer

Katalin Kalmár, László Cseke, Zsolt Káposztás, Örs Péter Horváth

Department of Surgery University of Pécs, Pécs, Hungary

43.**12.36:** The Effect Of Azygos Vein Preservation On Mediastinal Lymph Node Harvesting In Thoracic Esophagolymphadenectomy*Judith Boone¹, Marguerite Schipper², Ronald Bleys¹, Inne Borel Rinkes³, Richard van Hillegersberg³ Surgery¹, Pathology² and Pharmacology & Anatomy³, University Medical Center Utrecht, Utrecht, The Netherlands*

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*Kayode Oduwole, Paul Birhire, Brian Hargan**Department of Surgery, Naas General Hospital, Naas, Kildare, Ireland***45.**

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*Zeini Salam, Vionnet Michel**Surgery, HIB, PAYERNE, VAUD, Switzerland***46.**

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*Afaq Zaman Khan¹, Iqbal Khan²**General Surgery, Grand Rapids/Michigan State University, Grand Rapids, Michigan, USA¹. General Surgery, AMNCH, Tallaght, Dublin, Ireland²***47.**

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*Paolo Parise¹, Stefano Santi¹, Biagio Solito¹, Valentina Radicchi¹, Mauro Rossi¹**Chirurgia Generale IV, Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy*

GERD

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A Quantitative Descriptive Study Of Quality Of Life With Dyspepsia And Gastro-oesophageal Reflux

*Caroline Fogarty, Colm O'Morain**Gastroenterology, Adelaide and Meath Hospital, Tallaght, Co. Dublin, Ireland***49.**

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*Dorota Cibor, Irena Ciecko-Michalska, Danuta Owczarek, Pawel Szulewski**Department of Gastroenterology, Jagiellonian University, Krakow, Poland***50.**

Effect Of Weight Reduction On Symptoms' Intensity In Patients With Gerd And Overweight

*Dorota Cibor, Danuta Owczarek, Irena Ciecko-Michalska, Pawel Szulewski**Gastroenterology, Jagiellonian University, Krakow, Poland***51.**

Long Term Results Of Surgery For Paraesophageal And Mixed Types Of Hiatus Hernias

*Maria Luisa Lugaresi¹, Sandro Mattioli², Matteo Mandrioli², Vladimiro Pilotti², Frank D'Ovidio¹, Tommaso Bartalena²**Department of Surgery, Intensive Care, and Organ Transplantation, University of Bologna, Division of Esophageal and Pulmonary Surgery Villa Maria Cecilia e San Pier Damiano Hospitals, Bologna, Italy¹. Division of Cardiothoracic Surgery, Columbia University Medical Center, New York, USA²***52.**

The Gastroesophageal Prolapse In GERD: Clinical Patterns And Surgical Outcome

*Beatrice Aramini, Sandro Mattioli, Maria Luisa Lugaresi, Massimo Pierluigi Di Simone, Tommaso Bartalena, Luca Ferruzzi**Department of Surgery, Intensive Care, and Organ Transplantation, University of Bologna, Division of Esophageal and Pulmonary Surgery Villa Maria Cecilia e San Pier Damiano Hospitals, Bologna, Italy*

Barrett's

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NZ Ahmad, T Ryan

General Surgery, Letterkenny General Hospital, Letterkenny, Co Donegal, Ireland

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Increasing Endoscopic Detection Of Short Barretts' Oesophagus During The Last 12 Years In A University Teaching Hospital

Manuel Pera¹, Jimeno Jaime¹, Alonso Sandra¹, Comerma Laura¹, Iglesias Mar², Seoane Agustin³, Ramon Jose Manuel¹, Grande Luis¹

Gastrointestinal Surgery¹, Pathology², Endoscopy Unit³, Hospital Universitari Del Mar, Barcelona, Spain

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Dimitris Lapatsanis, George Skrekas, Stratis Zouros

Surgical Department, Iaso General Hospital, Athens, Greece

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GSTO: A New Marker Of Progression From Barrett's Esophagus To Adenocarcinoma

Nicola de Bortoli¹, Simona Piaggi², Aldo Paolicchi², Eugenio Cancia², Michela Saviozz², Mauro Rossi³, Alessandro Casini², Santino Marchi¹

Gastroenterology¹, Experimental Pathology², University Of Pisa, General Surgery Iv, Hospital Of University Of Pisa², Pisa, Italy

Surgery

57.

No Additional Value Of Bronchoscopy After EUS In The Preoperative Assessment Of Patients With Oesophageal Cancer At Or Above The Carina

Jikke MT Omlloo¹, Mark van Heijl¹, Jacques JGHM Bergman⁴, Mia GJ Koolen³, Mark I van Berge Henegouwen¹, J Jan B van Lanschoot^{2, 1}

Surgery¹, Gastroenterology², Pulmonary Diseases³, Academic Medical Centre, Amsterdam, Surgery, Erasmus Medical Centre, Rotterdam⁴, The Netherlands

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Oesophageal Reconstruction Modes: Iso- Or Anisoperistaltic, Pre- Or Retrosternal, Gastric Or Jejunal Implantation

Dragos Predescu, Adrian Constantin, Mircea Gheorghe, Ionut Predoiu, Silviu Constantinoiu

Esophageal and general surgery, St. Mary Hospital, Carol Davila University of Medicine, Bucharest, Romania

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Developments in esophageal surgery for adenocarcinoma: A comparison of two decades

I. Gockel, F.S. Sultanov, M. Domeyer, U. Goenner, Th. Junginger

Department of General and Abdominal Surgery, Johannes Gutenberg-University of Mainz, Mainz, Germany

Cancer

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Patients with Locally Advanced Oesophageal Carcinoma Non-responder to Radiochemotherapy: Who Will Benefit from Surgery?

Guillaume Piessen, Nicolas Briez, Jean-Pierre Triboulet and Christophe Mariette

Department of Digestive and Oncological Surgery, University Hospital Claude Huriez-Centre Hospitalier Régional Universitaire, Lille, France

61.**Adenocarcinoma Of The Proximal Esophagus: Report Of 9 Patients**

Salvatore Marano¹, Alberto Ruol¹, Carlo Castoro², Giuseppe Portale¹, Matteo Cago², Rita Alfieri¹, Silvia Michieletto¹, Ermanno Ancona²

Gastroenterological and Surgical Sciences, Clinica Chirurgica III¹, Padova, Surgery, Istituto Oncologico Veneto², Italy

62.**Esophageal Cancer Following Radiation Therapy For Breast Cancer**

Rita Alfieri¹, Alberto Ruol¹, Carlo Castoro², Matteo Cago², Vanna Chiarion Sileni³, Caterina Boso⁴, Silvia Michieletto¹, Ermanno Ancona²

Surgical Sciences and Gastroenterology, Clinica Chirurgica¹, Istituto Oncologico Veneto, Surgical Oncology², Istituto Oncologico Veneto, Clinical Oncology³, Istituto Oncologico Veneto, Radiotherapy⁴, Padova, Italy

63.**COX-2 and VEGF Expression In Esophagogastric Junction Adenocarcinoma—A Molecular Target For Therapy?**

Rodica Birla¹, Cristina Iosif², Crisina Gindea¹, Petre Hoara¹, Silviu Constantinoiu¹

General And Esophageal Surgery Clinique¹, Pathology Department², St Mary Hospital, Umf Carol Davila, Bucharest, Romania

ESE 2007 – Dublin Sept 13th–15th 2007

Oral Presentations

Friday 14 September 2007

11:00–12:30: I. GERD

1. Study of the Proliferative Effect of Acid Suppression in a Duodenal Reflux Animal Model

Ayman Nasr^{2, 1}, Paul Dawney², Adrian Ireland¹,
Eamon Leen^{2, 1}, David Bouchier-Hayes^{2, 1},
Thomas Walsh^{2, 1}

Department of Surgery¹, Royal College of Surgeons,
Dublin, Ireland. Department of Surgery², Connolly
Hospital Blanchardstown, Dublin, Ireland

Introduction. Esophageal mucosa responds to injury by increased proliferative activity of the basal layer cells—basal cell hyperplasia—reflected in increased expression of proliferation markers EGF-R, Ki-67 and PCNA. Increased expression of proliferation markers are described in gastro-esophageal reflux disease and esophageal carcinoma. This study examined the effect of acid suppression on proliferation activity of the esophagus in an animal model.

Methods. Four groups of male Sprague-Dawley rats aged 8–10 weeks were studied;

Group A (n=33) were unoperated controls.

Group B (n=34) had an esophago-duodenostomy to produce combined acid and duodenal reflux.

Group C (n=35) had an esophago-duodenostomy and total gastrectomy to produce pure duodenal reflux (surgical acid suppression).

Group D (n=34) had an esophago-duodenostomy and acid suppression with omeprazole 13.5mg/kg by alternate daily injection (medical acid suppression).

Animals were sacrificed at 26 weeks and the esophagus harvested. Tissue proliferation markers were identified by immunohistochemistry and scored 0 to 2.

Results. No controls developed hyperplasia compared to 100% of all three surgical groups. No controls exhibited an overall score of 1 of the three proliferative markers compared to 32% of the combined reflux, 77% (p<0.001) of the surgical acid suppression group and 44% (p=0.131) of the omeprazole (medical) group.

Conclusion. Acid suppression results in an increased proliferative activity, which can predispose to malignant

transformation. Basal cell hyperplasia alone is not a sensitive indicator of the severity of injury secondary to reflux compared to proliferation markers expression. These findings can be the basis for anti-proliferative anti-inflammatory therapy.

2. A Model Of Reflux-Induced Esophageal Carcinogenesis In The Rat

Daniela Segat², Emanuela Dazzo², Giuseppe Ingravalle⁵, Massimo Rugge^{1, 4}, Maurizio David Baroni², Giovanni Zaninotto³, Ermanno Ancona^{3, 4}
Departments of Surgical and Gastroenterological Sciences¹, Biology², Pathology³, Padua University, Padua, Italy. Istituto Oncologico Veneto⁴, Padua, Italy. Department of Pathology⁵, Bari University, Bari, Italy

Background. Esophageal adenocarcinoma (EA) development is a multistage process, that origins from a precancerous tissue, called Barrett's esophagus (BE), induced by chronic exposure of esophageal mucosa to duodeno-gastro-esophageal reflux (DGER). Surgically induced DGER reproduces in experimental animals the steps from normal mucosa to BE, dysplasia and adenocarcinoma.

Aims. The aim of this work was to reproduce a surgical rat model of DGER-induced BE/EA with 3 technical innovations: no pre-operative restriction of food, protocol of vessel ligation and use of running suture.

Methods. 74 adult inbred Wistar rats were consecutively operated to induce DGER. After surgery, animals were scored using numerical (NSS) and binary score (BSS) systems to assess animal welfare.

Results. The long-term (>10 weeks) survival rate was 78%. The most common clinical signs resulted body weight loss, starey coat, nasal discharge and abnormal breathing. Consistently, the main long-term clinically evident complication was pneumonia (presumably *ab-ingestis*). Animal weight resulted a major parameter of welfare during the follow up. Surprisingly, we did not find any correlation between animal weight loss and the severity of pneumonia at *post-mortem* evaluation, while

animal weight loss correlated with the presence and grading of esophageal ulcers.

Preliminary data showed the development of island of multilayer epithelium, resembling Barrett's esophagus, already at 10 weeks after surgery. Therefore, animal sacrifices were planned at 5, 10, 20, 30, 40 and 50 weeks to monitor BE, dysplasia and EA development.

Conclusion. This model appears to be suitable to plan *in vivo* experiments devoted to study esophageal cancerogenesis at histological, cellular and molecular level.

3. 96-Hour Bravo® pH Monitoring Increases Detection Accuracy For Abnormal Esophageal Acid Exposure

Giuseppe Portale, Giovanni Zaninotto, Mario Costantini, Sabrina Rampado, Christian Rizzetto, Emanuela Guirrolì, Martina Ceolin, Ermanno Ancona. *Gastroenterological and Surgical Sciences, Clinica Chirurgica III, Padova, Italy*

Background. There is, to date, no data reported on consecutive 96-hr pH monitoring with the Bravo® capsule in patients off-PPI.

Aim. To study the relative value of a 4-day vs. 2-day Bravo® study in detecting abnormal esophageal acid exposure.

Methods. 31 patients underwent 4-day Bravo® study. We excluded patients not completing 96-hr pH recording period or post-fundoplication or presenting with atypical only GERD symptoms. PH test was considered positive with a Johnson-DeMeester score >14.7. All patients had symptom assessment, barium swallow, endoscopy; some patients also 24-hr standard or impedance pH monitoring.

Results. 28/31 (90%) patients completed 4-day study. 20 patients (10M:10F, median age 43 yrs) presented with heartburn, chest pain, acid regurgitation lasting >6 months, completed two consecutive 48-hr Bravo® pH monitoring periods and formed our study population. Lengthening the recording time up to 96 hrs increased the accuracy in categorizing patients as GERD/non-GERD by 15%. 3 patients (normal esophageal mucosa, no hiatal hernia, partial response to PPI, negative 24-hour pH monitoring with standard or impedance catheter, had either day-1/day-2 positive but overall 1st 48-hr score negative. Day-3, day-4 and overall 2nd 48-hr score were positive in all 3 patients.

Conclusions. Compared to 48-hr alone data, 96-hr data added a diagnostic yield of 15% in defining patients with GERD. Since day-to-day variability in esophageal acid exposure in GERD patients may be missed by 24-hr and also 48-hr pH test, we suggest to prolong the Bravo® study to 4-day, with no discomfort for the patient and increased diagnostic yield for clinicians.

4. Male Sex And Increased Gastro-Esophageal Pressure Gradient Are The Major Determinants Of Gastroesophageal Reflux Disease In Morbidly Obese Patients

Fernando Fornari³, Carlos Augusto Scussel Madalosso³, Luiz Fernando Madalosso³, Plácido Jose Scussel³,

Richard Ricachenevsky Gurski³

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Background. Obesity is a risk factor for gastroesophageal reflux disease (GERD). Disruption of the esophagogastric junction due to overweight is believed to be the main mechanism underlying reflux.

Aims. To assess the relationship between gastro-esophageal pressure gradient (GEPG), anthropometric measurements and objective GERD parameters in morbidly obese patients.

Methods. Fifty-three consecutive morbidly obese patients [32% male, 37 ± 10.3 years, mean body mass index (BMI) 45.7 kg/m^2] were prospectively investigated for GERD during pre-operative evaluation for bariatric surgery. Patients underwent upper gastrointestinal endoscopy, esophageal solid-state manometry and 24h esophageal pH-metry "off PPI". GEPG was calculated as the difference between gastric and esophageal basal pressures. GERD was considered positive in the presence of erosive esophagitis and/or increased esophageal acid exposure. Patients with and without GERD were compared regarding GEPG. Correlations were calculated for GEPG and anthropometric measurements.

Results. Overall prevalence of GERD was 75.5%, being more frequent in men than in women (94.1% vs. 66.6%; $P = 0.040$). Compared to patients without GERD, those with GERD had similar BMI (45.8 vs. 45.4 kg/m^2 ; $P = 0.942$) but increased GEPG (12.7 vs. 9.3 mm Hg ; $P < 0.001$). Taking the whole group of patients, GEPG was correlated with waist-hip ratio ($r = 0.44$; $P < 0.001$) and particularly with waist circumference ($r = 0.55$; $P < 0.0001$).

Conclusions. In morbidly obese patients, GERD is related with male sex and increased gastro-esophageal pressure gradient. The correlation between waist circumference and GEPG suggests that visceral obesity plays a role on GERD in this population.

5. Nocturnal Non-Acid Gastroesophageal Reflux

Fernando Fornari, Kathleen Blondeau, Jan Tack, Daniel Sifrim

Gastroenterological Research, Catholic University of Leuven, Belgium

Background. Studies so far suggest that nocturnal non-acid reflux is a rare phenomenon. Impedance-pH monitoring allows characterization of non-acid reflux and esophageal activity associated with reflux.

Aims. 1. To assess the prevalence of nocturnal non-acid reflux in healthy subjects and GERD patients; 2. To describe the characteristics and the esophageal activity preceding and following nocturnal non-acid reflux in GERD patients.

Methods. Impedance-pH studies from 11 healthy subjects and 76 GERD patients (off PPI) were analyzed. Reflux characteristics, nocturnal distribution and esophageal activity seen at impedance during 2 min intervals preceding and following reflux were described.

Results. Healthy subjects had less episodes of total nocturnal reflux than GERD patients (3.3 vs. 8.7 episodes; $P < 0.01$), with higher proportion of non-acid reflux (70.3% vs. 53.7%; $P < 0.05$). In GERD patients, non-acid reflux was mainly pure liquid (82%) with one third of episodes (27.8%) reaching the proximal esophagus. Total nocturnal reflux was more frequent in the first 2 supine hours (33.1% of all GER), with most episodes being acid (66.2%). The proportion acid/non-acid changed throughout the night, with non-acid reflux predominating in the last 4 hours (68.6%; $P < 0.0001$). Most non-acid reflux were preceded by episodes of aboral flow during the 2 minutes pre-reflux window (suggesting arousal) and were followed by aboral sequences with short lasting volume clearance (15.6s).

Conclusions. Nocturnal non-acid reflux is not a rare phenomenon in GERD. Unlike acid reflux, non-acid reflux is more frequent later in the night and has a fast clearance process.

6. The Effect Of Anti-reflux Surgery Barrett's Esophagus

Martina Ceolin¹, Emanuela Guirrolì¹, Christian Rizzetto¹, Mario Costantini¹, Cristina Silvestre¹, Lisa Zanatta¹, Giovanni Zaninotto¹, Massimo Rugge²
Surgical and Gastroenterological Sciences¹, Clinica Chirurgica III and Istituto Oncologico Veneto² – IRCCS, University of Padua, Padova, Italy

Background. Barrett's epithelium (BE), defined as endoscopically visible, histologically proven intestinal-type epithelium in the esophagus, is associated with a 30–150 folds increased risk of adenocarcinoma.

Aim. To evaluate the phenotypic, histological and immunohistochemical changes in BE eventually induced by laparoscopic anti-reflux surgery.

Methods. We prospectively evaluated the patients with BE who underwent anti-reflux fundoplication. Patients were studied pre- and post-operatively with a standardized symptom questionnaire, esophageal manometry and 24-hour pH monitoring. All endoscopic biopsies undertaken preoperatively and at least one year after surgery were reviewed.

Results. Forty patients were evaluated [32 M, 8 F; median age 52 years (range 20–72)] with a median follow-up of 52 months (range 12–132). The median symptom score dropped from 16 (0–42) to 0 (0–21) [$p < 0.05$]. The acid exposure decreased from 8.6 (0.3–40.1) to 0.1 (0–39.5) [$p < 0.01$]. The lower esophageal sphincter pressure increased from 7 (3–33) to 13 (2–29) mmHg [$p < 0.01$]. Esophagitis, when present, healed in 78% (18 out of 23) of patients. No significant changes were found in patients with long-segment Barrett's mucosa. However, in the group of patients with short-

segment Barrett, intestinal metaplasia was no more detectable after surgery in 5/13 (38%). Further, after surgery the phenotype (complete/incomplete) of the intestinal metaplasia changed and a significant shift from incomplete- to complete-type intestinal metaplasia was documented, only in patients with short segment BE.

Conclusions. Surgery is effective in controlling symptoms, reducing esophageal acid exposure and healing esophagitis. Barrett's mucosa may also regress after surgery.

7. Endoluminal Fundoplication (Elf) For Gerd–Short Term Results

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Aims. Aim of the present study is to evaluate the short term results of endoluminal fundoplication (ELF) using Esophyx (EndoGastric Solutions) in a group of patients operated on for gastroesophageal reflux disease.

Methods. Patients presenting at our Department during the period June 2006–January 2007 with a history of chronic reflux esophagitis (>6 months), with either endoscopic or pH-metric diagnosis, needing long term acid suppressive therapy, were asked to take part to the study. Patients with either a hiatal hernia larger than 3 cm or Barrett esophagus were excluded from the study. All patients were submitted to preoperative 24 hrs impedance monitoring and stationary manometry. All procedures were performed by a surgeon and a gastroenterologist together, under general anesthesia, with naso-tracheal intubation.

Results. 16 patients (11 male, 5 female) with a mean age of 47 yrs were included into the study. Nine patients had a small hiatal hernia (<3 cm); 4 had LA grade B/C esophagitis. The mean value of GERD-HRQL was 45; the mean time with esophageal pH<4 was 9%. The mean duration of the procedure was 62 minutes. A mean of 14 polipropylene fasteners were applied in each patient, to construct a 228° valve (range 200–270°). There were no major intraoperative complications. Two patients had an hematemesi on the 1st and on the 8th postoperative day, which were treated conservatively (postoperative major complication rate 12.5%). Six patients have reached a six month follow up: symptoms have improved, GERD-HRQL score has decreased but no significant improvement was detected for what concerns pH impedance and endoscopy.

Conclusion. ELF is a new attractive technique for the endoscopic treatment of GERD. Patients treated with the procedure had an improvement in symptoms but early results on endoscopy and pH esophageal exposure are unsatisfactory. Technical improvements may be necessary to obtain good results in the short term period.

8. EsophyX™ Device. A New Technique For Flexible Endoscopic Intraluminal Fundoplication For The Treatment Of Gastro-Esophageal Reflux Disease (GERD)

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Surgery¹, Epidemiology², University Hospital Maastricht and Gastroenterology³, Hospital Maastricht, Maastricht, The Netherlands

Background. Endoluminal fundoplication (ELF) using the EsophyX™-device is a new minimal invasive option for treatment of GERD. We report the first results of patients treated with this device in our hospital.

Aims. To investigate whether endoluminal fundoplication with EsophyX™ is a safe and efficacious procedure to control GERD.

Methods. GERD-patients who were symptomatic on proton pump inhibitors (PPI) or unwilling to use lifelong medication. Procedure: the endoluminal device, moved over the endoscope, using a retroflexed view creates a full thickness fundoplication of at least 180 degrees circumference. Outcome measures: 24 hour pH-metry, endoscopy, GERD-HRQoL and use of PPI.

Results. 23 GERD patients were treated with ELF and had a follow up of at least 3 months. ELF was performed safely without serious complications. No dysphagia or gas-bloat-syndrome was seen. The Hill grade decreased from mean 2.78 before to 1.04 after procedure ($p < 0.001$).

Endoscopic examination at 3 months showed a continued persistence of valve with a median circumference 220 degrees (range 180–240) and size of the hernia decreased from 2.26 cm to 0.91 cm. GERD-HRQL improved from mean 33.6 (2–70) to 19.3 (1–60) ($p < 0.001$) and 24 hour pH metry showed a mean acid exposure time reduction to 8.6 (0.6–52.1) from a pre-operative mean of 11.3 (range: 1.3–54.2) ($p = 0.007$).

Almost 75% of patients were able to stop all medication during the 3 month-follow-up and mean daily dose of PPI use is reduced from the pre-operative average of 3.17 to 0.48 ($p < 0.001$).

Conclusion. The EsophyX™ ELF appears to be a safe and efficacious endoluminal procedure to control GERD in short term follow up.

9. Gastroesophageal Reflux And Detection Of Pepsin And Bile Acids In Balf In Lung Transplant Recipients With Or Without Chronic Rejection

V Mertens¹, K Blondeau¹, B Vanaudenaerde², DE Van Raemdonck², GM Verleden², LJ Dupont², D Sifrim¹
Gastroenterological Research¹ and Lung Transplantation, University Hospital Gasthuisberg, Leuven, Belgium

Background. Gastroesophageal reflux (GER) and gastric aspiration have been labeled as risk factors for chronic rejection (BOS) after lung transplantation (LTx) and

reflux surgery has been suggested to protect LTx recipients from BOS.

Aims. Of our study was to investigate gastroesophageal reflux and gastric aspiration in LTx recipients with or without BOS.

Methods. Gastroesophageal reflux was assessed using 24hr impedance-pH monitoring. BALF samples were analyzed for the presence of pepsin and bile acids. 14 BALF samples of non-transplant subjects were collected for control.

Results. 48% of the LTx recipients had increased GER (either increased acid exposure, volume exposure or number of reflux events). There was no significant difference in the groups with chronic rejection or without chronic rejection. All 45 LTx patients had detectable levels of pepsin in the BALF. The median pepsin concentration in the BALF of LTx recipients (541 ng/ml) was significantly higher than in 'non transplant' patients (24 ng/ml). Twenty-two of 45 LTx recipients (49%) had detectable bile acids in the BALF, compared to none of the non-transplant controls. The concentration of pepsin in BALF was similar in patients with or without BOS. Significantly more patients with BOS (12/17) had detectable bile acids in the BALF compared to stable patients (5/16, $p = 0.03$).

Conclusion. Half of the LTx patients had increased GER during the ph-impedance monitoring. Gastric aspiration occurs frequently in LTx recipients. Pepsin seems to be a general marker of aspiration whereas bile acids in BALF might be more specifically associated with the development of BOS.

10. GERD And Lung Transplantation: Prevalence And Possible Role In The Genesis Of Bronchiolitis Obliterans Syndrome

Martina Ceolin¹, Lisa Zanatta¹, Monica Loy², Giovanna Rizzard², Christian Rizzetto¹, Francesca Lunardi³, Cinzia Giacometti³, Elena Finotti³
Surgical and Gastroenterological Sciences, Clinica Chirurgica III¹, Chirurgia Toracica², Human Pathology³ and Istituto Oncologico Veneto – IRCCS, University of Padua, Padova, Italy

Background. Gastroesophageal reflux disease (GERD) may be a possible cause in bronchiolitis obliterans (BO) development. BO is the main factor causing long-term survival reduction in lung transplant patients.

Aim. To assess gastro-esophageal function and the prevalence of GERD in lung transplant patients and to evaluate its possible role in BO pathogenesis.

Methods. Lung transplant patients were evaluated with spirometry, bronchoscopy with transbronchial biopsies and bronchoalveolar lavage fluid (BALF) collection, LLMI (lipid-laden macrophage index) evaluation, upper endoscopy with biopsies at Z line and 2 cm above, gastric emptying study with ^{99m}Tc-marked milk, esophageal manometry and 24-hour pH-monitoring.

Results. We prospectively studied 16 patients [14 M, 2 F; median age 49.5 years (range 28–65)]; 10 (62.5%) received double and 6 (37.5%) single lung transplantation.

Our observation occurred at a median 5 months (range 2–84) after transplant.

Eight patients (50%) had typical GERD symptoms, 9 (56%) had a positive pH-monitoring and 5 (28%) had esophagitis at endoscopy. Manometry showed an abnormal esophageal motility in 1/3 and a defective lower esophageal sphincter in 1/4 of patients. Gastric emptying was prolonged in 75% of patients. LLMI was suggestive for aspiration (normal value: <85) in 5/8 patients with pH-proven GERD (62.5%) and in 3/7 patients with normal pH-monitoring (43%). Pulmonary function tests showed a FEV₁ decrease in 50% of patients.

Conclusions. GERD and delayed gastric emptying are increased in lung transplant patients. LLMI aspiration-index tends to be associated with GERD. It may be used to select patients for a more aggressive treatment (i.e. laparoscopic fundoplication).

14:00–15:00: II. Pathophysiology

11. Circulating Bone Marrow Derived Stem Cells In Reflux Oesophagitis, Barrett's Disease And Oesophageal Cancer

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Background. The incidence of oesophageal adenocarcinoma has increased, outstripping the incidence of squamous cell carcinoma. Recent evidence suggests that adult stem cells, including bone marrow stem cells, retain a previously unrecognized degree of developmental plasticity which allows them to differentiate across boundaries of lineage.

Aims. We hypothesized that marrow derived stem cells play a role in the pathogenesis of Barrett's disease and oesophageal cancer. Using flow cytometry, we examined blood samples of 24 consecutive patients diagnosed with oesophageal cancer over a 6 months period for evidence of circulating marrow derived progenitor endothelial and epithelial cells. The significance of progenitor epithelial cells lies in their propensity to turn into cancer cells, whereas that of the progenitor endothelial cells lies in their potential for angiogenesis.

Methods. Plasma samples from oesophageal cancer patients (n=24) were compared to samples from patients with Barrett's disease (n=24), reflux oesophagitis (n=24) and healthy controls (n=24). All patients were off proton pump inhibitors (PPIs).

Results. Progenitor endothelial cell levels were increased significantly in both the Barrett's and cancer patients and PPIs caused a further surge in levels. There was no difference in the progenitor epithelial cell count. This increase in progenitor endothelial cells may be beneficial, if these cells were part of a repair mechanism but detrimental if involved in angiogenesis. If the latter, it

has implications for the use of PPIs in reflux and Barrett's oesophagus.

Conclusion. There is increased mobilization of progenitor endothelial cells from the marrow into the circulation of patients with Barrett's disease and oesophageal carcinoma which is further augmented by PPIs.

12. Single Nucleotide Polymorphisms and Susceptibility for Cancer of the Esophagus and the Gastro-Esophageal Junction

Jurjen Boonstra^{1, 2}, Linetta Koppert², Andre Uitterlinden³, Hugo Tilanus², Winand Dinjens¹ Pathology¹, Surgery² and Internal Medicine³, Erasmus MC, Rotterdam, The Netherlands

Aims. The aim of the present study was to analyse the relationship between SNPs and the susceptibility for cancer of the esophagus.

Methods. SNPs were genotyped in DNA from 254 GEJ adenocarcinomas and 189 esophageal squamous cell carcinomas obtained from resection specimens and in a control group of 235 healthy blood donors. SNPs in p53, Her-2/neu, Cyclin D1, STK15, TGF α receptor, E-cadherin, p16, p73 and PPAR α were analysed by PCR-RFLP or Taqman. Significant differences between cases and controls were validated in separate validation cohorts of 326 GEJ adenocarcinomas and 209 squamous cell carcinomas.

Results. Subjects with the p16 exon 3 C/C genotype were at 1.5-fold reduced risk for squamous cell carcinoma as compared to those with C/G and G/G genotypes. Genotype frequencies were 51% (CC), 46% (CG) and 3% (GG) as compared to 75%, 23% and 2% GG in controls (p<0.001). Subjects with the Cyclin D1 exon 4 A/A genotype were at 1.3-fold reduced risk for squamous cell carcinoma as compared to the other genotypes. P73 exon 2 GC/GC genotype conferred a 1.2-fold increased risk for adenocarcinoma whereas the AT/AT genotype conferred a 1.99-fold increased risk for squamous cell carcinoma.

Conclusion. These data suggest that the p16 exon 3 C/C wildtype genotype and the Cyclin D1 exon 4 A/A variant genotype might be protective for the development of squamous cell carcinoma. The p73 exon 2 SNP may be a genetic susceptibility factor for the onset of esophageal squamous cell carcinoma (AT/AT) and GEJ adenocarcinoma (GC/GC).

13. Does Altered Biliary Function Promote Oesophageal Metaplasia/Neoplasia?

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Background. The dramatic increase in incidence of oesophageal adenocarcinoma is associated with an increase in incidence of gastro-oesophageal reflux disease (GORD). A minor alteration in gallbladder function

could have a major impact on the quality of the refluxate but an association with gallbladder function has not been studied.

Aims. The aim of this study was to examine gallbladder function in patients with Barrett's oesophagus and oesophageal adenocarcinoma and compare them with normal controls.

Patients and Methods. Three groups of patients were studied;

- Group 1 (n=14) were normal controls.
- Group 2 (n=11) were patients with long segment (>3cm) Barrett's oesophagus.
- Group 3 (n=15) were patients with oesophageal adenocarcinoma.

Following a 10 hour fast, gallbladder ejection fraction was calculated before and after a standard liquid test meal using real-time ultrasonography. Means ejection values were compared using Student *T* test for independent samples.

Results. The mean (SD) resting gallbladder volume was 25.6-mls³ (11.1) in controls, 38.1-mls³ (26.8) in Barrett's 29 mls³ (16.5) and in the adenocarcinoma group. The mean gallbladder ejection fraction was significantly lower in the Barrett's group (58.4%; *p*=0.046) and in the adenocarcinoma group (44.9%; *p*<0.001) compared with normal controls (72.4%).

Conclusion. Gallbladder function is progressively impaired in Barrett's oesophagus and adenocarcinoma and gallbladder malfunction is mirrored in increase in duodeno-gastric and gastro-oesophageal bile reflux. This in turn promotes metaplasia/dysplasia of the lower esophageal mucosa.

14. Elevation of 8-hydroxydeoxyguanosine Indicates The Role Of Oxidative DNA Damage In The Carcinogenesis Of Barrett's Esophagus

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Background. 8-hydroxydeoxyguanosine (8-OHdG) is a product of free radicals and plays a major role in the induction of spontaneous mutations. It is a prerequisite for carcinogenesis in many tissues. The role of 8-OHdG in the malignant transformation of Barrett's mucosa is unclear.

Aim. To estimate the contribution of a common marker of oxidative DNA damage, 8-hydroxydeoxyguanosine (8-OHdG), in the carcinogenesis of Barrett's mucosa.

Methods. We measured 8-OHdG in distal esophageal samples of 37 patients (13 Barrett's metaplasia, 6 Barrett's esophagus with high-grade dysplasia, 18 adenocarcinoma of the distal esophagus/esophagogastric junction) and 14 normal controls. The amount of 8-hydroxy-2'-deoxyguanosine was determined with HPLC equipped with an electrochemical detector, and deoxyguanosine with a UV detector. The 8-OHdG con-

centration was expressed as the ratio of 8-OHdG per 10⁵ dG.

Results. Analysis revealed significantly increased oxidative stress-related DNA damage (as 8-OHdG) in the distal esophagus both in Barrett's epithelium 1.26 (0.08–29.47) and in high-grade dysplasia 1.35 (1.04–1.65) as well as in adenocarcinoma of the esophagus/esophagogastric junction 1.08 (0.59–1.94) compared to controls 0.06 (0–4.08), (*p* = 0.002, *p* = 0.012, *p* = 0.001, respectively). Barrett's patients had no significant difference in 8-OHdG levels between their distal and proximal esophageal samples.

Conclusions. Our results indicate that in the malignant transformation of Barrett's esophagus an important component is oxidative stress. DNA damage seems to be mediated via 8-OHdG and the entire esophagus of Barrett patients suffers from increased oxidative stress.

15. Molecular Analysis of Vitamin C Supplementation: Tissue NFκB And Cytokine Profile In Barrett's Oesophagus, Differential Response Following Treatment.

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Background. The role of antioxidants such as vitamin C in chemoprevention is controversial. The transcription factor NFκB is central in the regulation of genes encoding for mediators of immuno-inflammatory responses like reflux oesophagitis.

Aims. To determine the effect of vitamin C on the activation status of NFκB and associated target cytokines in Barrett's oesophagus.

Methods. Twenty-three Barrett's patients (long segment Barretts > 3 cm) were studied. All patients received Vitamin C (1000mg/day) orally for four weeks. NFκB activity (activated p50 and p65 subunits) of nuclear extracts was assessed using the Active Motif NFκB TransAm assay. Cytokine analysis was performed on the Evidence Investigator biochip array.

Results. NFκB (p50 & p65) along with proinflammatory (IL-8, VEGF, IL-1A, IL-1B) and anti-inflammatory cytokines (IL-4) were activated in the Barrett's tissue of all patients pre-treatment. Following treatment, an upregulation/downregulation > 10% was considered significant. Reduction in NFκB (p50 subunit) levels was observed in 7/23 (30%) patients and an increase in 6/23 (26%), while 10 patients did not show any change. Of patients with reduced NFκB p50 activation, 66% showed downregulation of VEGF expression and 43% showed a decrease in IL-8, IL-1α and IL-1β levels post-treatment. Of patients with increased NFκB p50 subunit activation, 66% showed upregulation of VEGF expression as well as IL-1α.

Conclusion. Constitutive activation of NFκB and downstream cytokines was observed in all 23 Barrett's oesophagus patients. Vitamin C supplementation appeared to

modulate these responses in >50% of Barrett's patients. The role of this agent in the chemoprevention of oesophageal reflux injury is undergoing further investigation.

16. Oral Immune Tolerance Mediated By Tregulatory Cells May Be Responsible For The Poorer Prognosis Of Foregut Cancers

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Background. When patients with similar stages of disease at the time of diagnosis are compared, those with cancer of the oesophagus and stomach have a poorer outcome than those with cancer of the rectum and colon.

Aims. We hypothesise, that the processing of immunogenic tumour cells by the mucosal immune system of the upper gastrointestinal tract, reduces the antitumour immune response, through Tregulatory cells, facilitating a tumour growth advantage.

Methods. Balb/C mice were gavage fed fibrosarcoma tumour in PBS or PBS alone for 14 days. On day 15, subcutaneous tumours were induced. Anti-Treg antibody was administered i.p. at various time points with regard to feeding. Spleen tissue was excised and stained for CD3, CD4, CD8, CD25 and foxp3, to monitor the alterations of immune sub-populations, via flow cytometry, in response to feeding and therapy.

Results. Subcutaneous tumours, in the groups fed tumour antigen, appeared earlier and grew at a faster rate versus those receiving PBS ($p < 0.05$). Systemic Treg cell numbers were significantly higher in those exposed to tumour antigen ($p < 0.002$). The administration of anti-Treg antibody following feeding overcame the effects of oral tolerance, with 100% of mice curing of tumour. Continuous Treg inactivation during feeding and tumour challenge also resulted in 100% cure. These mice were resistant to tumour re-challenge 90 days post tumour clearance, when fully Treg competent.

Conclusion. Elimination of the effects of oral tolerance by immune-based therapy is now a realizable goal which could confer a relative survival advantage on patients with oesophageal and gastric cancers.

15:00–15:50: III. Esophagology – General

17. Eosinophilic Oesophagitis: The Incidence And Patient Demographic In An Adult Population Undergoing Upper Endoscopy

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Background. Recent interest has been raised in eosinophilic oesophagitis (EO) and its increased incidence. EO is hypothesised to be related to allergic/atopic conditions, incidence of which has also risen.

Aims. To determine incidence of EO in adult population undergoing upper GI endoscopy. To compare demographics of EO patients to those diagnosed oesophagitis without eosinophilia. To assess number and level of biopsies.

Methods. Total number of oesophagogastroduodenoscopies performed in our institution over a three year period (2003–2006) was recorded. Biopsies recorded as oesophagitis were examined. Eosinophilic oesophagitis was defined as >20 eosinophils per high power field +/- presence of basal layer thickening and papillary lengthening. Age, gender, number and site of biopsy was recorded. Age and gender were compared to the population labelled oesophagitis without eosinophilia.

Results. 9983 upper endoscopies were performed. 462 (0.05%) patients had oesophagitis. 6 had eosinophils present, 4 were EO by definition. The annual incidence of EO in this cohort was 0.6 per 1000 and 12.6/1000 in the oesophagitis group. EO group's median age was 17 (Interquartile range 15–27). M:F ratio was 5:1. Oesophagitis group's median age: 57 (IQR 44–68), M:F ratio 3:2. In EO group: Median number of biopsies was 4 (range 1–6). 25% had biopsies in upper, middle, lower oesophagus, 25% at 25,30,40 cm, remainder labelled oesophagus (no specific site).

Conclusions. EO affected predominantly young males in our cohort as compared to those with simple oesophagitis/reflux. Interestingly, eosinophilia was more common in recent biopsies (4/6 cases > 2005). A standardised approach to site of biopsy may lead to optimal diagnostic yield.

18. Patients With Primary (Idiopathic) Achalasia Have Circulating Peripheral Blood Mononuclear Immune Cells That Are Hyper- Reactive To The Herpes-Simplex -1 Virus

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Background. Achalasia is a primary esophageal motor disorder of unknown etiology. An autoimmune mechanism may be involved in the pathogenesis of primary achalasia. The stimulus initiating this is unknown but could involve the Herpes simplex-1 virus (HSV-1).

Aims. The aim of this study is to test the hypothesis that circulating peripheral blood mononuclear cells in patients with primary achalasia may be reactive to HSV-1.

Methods. Whole blood culture experiments were conducted with venous blood obtained from 150 patients with primary achalasia and 113 healthy controls. Whole

blood was cultured in the presence of ultraviolet inactivated HSV-1 or conditioned cell culture media. Reactivity of mononuclear cells to viral antigens was quantified by measuring expression of the cytokine gene interferon- γ using Real Time Polymerase Chain Reaction. Data are expressed as cytokine fold change corresponding to ratio of interferon- γ messenger RNA copies produced in antigen stimulated versus unstimulated cells. Interferon- γ fold change was compared between cases and controls using the unpaired student's t-test after log transformation and expressed as median (interquartile range).

Results. The interferon- γ fold change was higher in cases 61.33 (20.54–217.00) than controls 49.67 (10.05–157.05). Mean fold change difference between cases and controls was 1.60 times (95% confidence interval 1.07–2.41, $p = 0.02$).

Conclusions. The results indicate that mononuclear immune cells hyper-reactive to HSV-1 are present in the peripheral blood of patients with primary achalasia and may contribute to the pathological changes observed in the myenteric plexus.

19. Reduction of interstitial cells of Cajal (ICC) associated with neuronal nitric oxide synthase (n-NOS) in patients with achalasia

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Background. The etiology of achalasia is still unknown. The current theories of chronic inflammation leading to autoimmune response with destruction and loss of the inhibitory myenteric ganglion cells enlighten its pathogenesis from a limited view only. Interstitial cells of Cajal (ICC) have been shown to be involved in nitrergic neurotransmission of the lower esophageal sphincter (LES).

Aim. To investigate the significance of interstitial cells of Cajal (ICC) and neuronal nitric oxide synthase (n-NOS) in esophageal wall tissue of patients undergoing surgery for achalasia.

Methods. In 53 patients with a median age of 45 (6–78) years undergoing surgery for achalasia, immunoreactivity of ICC (CD 117/c-kit) and n-NOS was carried out. In 42 patients, biopsies were taken from the LES high pressure zone in the context of a Heller myotomy, whereas in 11 patients the complete esophagus was resected in patients with end-stage achalasia and a decompensated megaesophagus. A semiquantitative analysis was carried out and ICC and n-NOS impairment was classified into 4 grades. Staining intensity was correlated to preoperative clinical, radiologic and manometric findings and to the long-term postoperative Eckardt score.

Results. Grade III/IV of ICC reduction (severe reduction to complete loss) was seen in 59.5% of all biopsy specimens of the LES high pressure zone. Patients with Grade III/IV ICC reduction displayed a significantly longer duration of achalasia symptoms (3 (0–43) years) as compared to patients with a minor to marked (Grade I/II) impairment (1 (0–16) years) ($p=0.028$). 72.5% of tissue samples revealed severe reduction to complete loss of n-NOS immunoreactivity. The preoperative Eckardt score was statistically significant different in patients with Grade I/II versus Grade III/IV reduction of n-NOS ($p=0.031$). CD 117 (c-kit) positivity correlated statistically significant with the staining intensity for n-NOS (correlation coefficient $r=0.781$; $p<0.0001$).

Conclusion. The present results suggest that in the pathogenesis of achalasia, especially in the development of the lower esophageal sphincter high pressure zone, depletion of interstitial cells of Cajal (ICC) networks and consequent changes in the electrical activity of smooth muscle cells play a crucial role. The reduction of CD 117 positive ICC in our patients also seemed to be of relevance, even if the cells of Auerbach's plexus were unscathed. The associated reduced NOS-release might underlie the profound ICC impairment and could possibly be responsible for the lack of LES-relaxation, on account of the missing inhibitory neurotransmission. It is unclear, however, whether the ICC loss is primarily caused by the accelerated attrition of mature cells or their impaired regeneration.

20. Laparoscopic Repair Of Large Hiatal Hernia: Comparison Of Three Different Techniques Of Mesh HiatoPlasty To Prevent Mesh Related Complications

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Background. In order to reduce high recurrence rate observed after laparoscopic repair of large hiatal hernia, several techniques were developed. The most widely accepted one is the mesh hiatoPlasty. Although series showed lower recurrence rate in favour of mesh hiatoPlasty compared to primary repair, mesh related complication also published.

Methods. Retrospective analysis of 75 patients who underwent laparoscopic repair for large hiatal hernia between 1998 and 2007 were performed. 31 patients had primary repair without reinforcement of the hiatal closure (group A), in 26 patients the hiatoPlasty was reinforced with the teres ligament (group B) and 18 patients had a modified mesh cruroPlasty (group C). In the latter cases the mesh was covered with the omentum. Patients were called back for follow-ups in a regular basis to observe anatomic recurrence with barium swallow. The mean follow-up time was 49,6 months in group A, 30,9 months in group B and 10,5 in group C.

Results. The mean operation time was 93, 115, 110 minutes respectively. Anatomic recurrence investigated

by barium swallows was observed 32,2 % in group A, 15,3% in group B and 5,5% in group C.

Conclusion. Laparoscopic reinforcement of the hiatal closure with the teres ligamentum or with omentum covered mesh is safe and effective treatments for large hiatal hernias. Although reinforcement of the hiatal closure with teres ligament reduces recurrence rate compared to primary repair, it seems that the best results can be achieved with mesh cruroplasty.

21. Esophageal Resection In Patients With Recurrent Achalasia Following Myotomy

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Background. Esophagectomy for achalasia is usually performed after failed surgical myotomy or for sigmoid megaesophagus. We reviewed hospital records of patients undergoing esophageal resection and gastric pull-up for achalasia and assessed the results using a prospectively collected database.

Methods. Between January 1997 and October 2006 11 patients [6M:5F; median age 52 years, Interquartile Range (IQR) 25–58], underwent esophagectomy for achalasia. They all had megaesophagus secondary to achalasia: 2 patients had undergone previous Heller myotomy, 7 patients Heller myotomy followed by endoscopic dilation, 1 patient had had two and another three myotomies.

Results. All patients had Ivor-Lewis esophagectomy (in two, laparoscopic mobilization of the stomach was performed). Esophagectomy was performed a median of 19.6 (IQR: 12–26.5) years after myotomy. Intraoperative complications included spleen damage (1 pt, splenectomy). Mortality was nil. Postoperative morbidity was 27.3%. One patient had anastomotic bleeding (10th post-op, Argon laser). One patient had early reoperation for chylothorax (6th post-op). Median hospital stay was 13 days (IQR: 11–19). Four (36%) patients developed postoperative dysphagia: one underwent remodeling of the gastric pull-up and three had endoscopic dilations (n.dil=2). All patients were dysphagia-free at a median follow-up of 54 (IQR: 32–59) months. They all had endoscopic follow-up, at a median of 30 months (IQR: 10–47) after esophagectomy: one patient presented supra-anastomotic esophagitis. Four (36%) patients were on PPI therapy at last follow-up.

Conclusions. Esophageal resection and gastric pull-up achieves significant improvement of symptoms in patients with megaesophagus, even when previous endoscopic treatments or non-resective procedures are unsuccessful. However, esophagectomy, even for benign diseases, remains a major surgical procedure, burdened by a significant morbidity rate.

16:15–17:30: IV. Staging and Treatment Strategies

22. Diagnostic Strategy For Pretreatment Staging Of Patients With Oesophageal Cancer

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Background. Guidelines on oesophageal cancer recommend a set of preoperative investigations: computed tomography of chest and abdomen (CT), endoscopic ultrasonography (EUS) and external ultrasonography of the neck (US). There is no consensus on the recommended order for these investigations.

Aim. To determine an efficient strategy for pretreatment staging of patients with oesophageal cancer.

Methods. Based on data collected in 412 consecutive patients with oesophageal cancer, evaluated between October 2002 and December 2006, we compared 15 staging strategies: all possible orders of all possible subsets of the three staging modalities. We assumed that staging would be performed sequentially and if distant metastases or local irresectability were found and confirmed, no further staging would be performed. We primarily compared the strategies on the minimal number of investigations needed to detect all patients with incurable disease.

Results. Incurable disease due to distant metastases or local irresectability was observed in 83 of the 412 patients. Using all three staging procedures in all patients would mean a total of 1236 investigations. The minimal number of investigations necessary for the strategies to detect all incurable patients was: US-CT-EUS 1156, US-EUS-CT 1146, CT-US-EUS 1130, CT-EUS-US 1112, EUS-US-CT 1122 and EUS-CT-US 1112.

Conclusion. The use of a conditional staging strategy with a specific order of imaging, reduces the number of tests necessary to identify incurable patients. The strategy CT-EUS-US and EUS-CT-US appeared most efficient in our analysis, decreasing the total number of investigations with 10%. If appropriate logistic adjustments are made, the staging process for patients with oesophageal cancer could be improved.

23. Prediction of Lymph Node Status in Superficial Esophageal Carcinoma

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Background. Chances for cure in esophageal carcinoma (EC) patients depend on early recognition and treatment. Prediction of lymph-node involvement allows early curative treatment with less invasive approaches.

Aims. To determine clinico-histopathological criteria predicting lymph-node involvement in patients with T1m/T1sm EC and to identify patients best candidates for local endoscopic or minimally-invasive surgical treatment.

Material and Methods. We retrospectively studied patients with T1m/T1sm EC who underwent Ivor-Lewis/McKeown esophagectomy (1980–2006). Based on the depth of invasion, mucosal lesions were classified as “m1” (intra-epithelial carcinomas), “m2” (lamina propria), “m3” (muscularis mucosae); submucosal lesions as “sm1” (invasion of superficial 1/3 of submucosa), “sm2” (middle 1/3), and “sm3” (deeper layer).

Results. 98 patients with T1m/T1sm EC (72M:26F) underwent esophagectomy: 67 squamous cell carcinoma [SCC], 31 adenocarcinoma [ADK]. EC was intramucosal (Tis/m) in 27 (3 m1, 12 m2, 12 m3), submucosal (T1sm) in 71 (36 sm1, 7 sm2, 28 sm3). Lymph-node metastases for sm1 were 0% (ADK) and 12.5% (SCC). Neural invasion was the single parameter with greatest accuracy (82%) in predicting lymph-node metastases; depth of infiltration and angiolymphatic invasion had 75%; altogether the three parameters had 97% accuracy. 5-year survival was 56.7%: 77.7% T1m and 53.3% T1sm, $p=0.048$.

Conclusions. Depth of tumor infiltration, angiolymphatic invasion, neural invasion, lymphocytic infiltrate predict lymph-node involvement. Best candidates for endoscopic therapy are patients with histologically well-differentiated neoplasms, high-grade lymphocytic infiltration, expansive growth pattern tumor, no angiolymphatic/neural invasion, T1m infiltration or sm1 (ADK), <1cm tumor size. For submucosal SCC and sm2/3 ADK the treatment of choice remains esophagectomy with standard lymphadenectomy.

24. Neoadjuvant Chemoradiation In Oesophageal Carcinoma. Impact On The Lymph Node Status

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Background. Neoadjuvant chemoradiation (CRT) is considered the standard treatment for locally advanced oesophageal carcinomas. Influence of CRT on lymph node status and consequently on staging and surgical quality criteria is unknown.

Aim. The aim of this study was to evaluate the impact of neoadjuvant CRT on histological lymph node status.

Methods. From 1995 to 2002, among 172 patients with locally advanced squamous cell carcinoma T3N+ resected, 17 who underwent surgery alone (because of a CRT contra-indication, S group) were randomly matched for ASA score, age, gender, denutrition and tumoural location to 59 control patients who underwent CRT followed by surgery (CRT group). Patients were included only if they underwent en bloc transthoracic oesophagectomy with two field lymphadenectomy, complete resection, analysis of more than 6 lymph nodes and two independent histological analyses.

Results. The two groups were comparables. Postoperative mortality and morbidity rates were 5.3% and 43.4%, respectively. CRT allowed a significant downstaging regarding T status (100% pT3–4 in the S group vs 46% in the CRT group, $P = 0.006$) and N status (82% pN1 in S group vs 51% in CRT group, $P = 0.020$). Mean number of analysed nodes was 17.1 $\pm$ 9.3 [6–71], significantly higher in the S group compared to the CRT group (22.7 $\pm$ 15.1 vs 15.4 $\pm$ 6.1, respectively, $P = 0.046$). Mean number of involved nodes was 1.8 $\pm$ 2.7 [0–14], significantly higher in the S group compared to the CRT group (2.9 $\pm$ 3.5 vs 1.4 $\pm$ 2.3, respectively, $P = 0.022$).

Conclusion. Neoadjuvant CRT allowed a wellknown tumoural downstaging but with a significant decrease of percentage of pN1 patients, number of analysed and involved nodes after surgery for locally advanced squamous cell carcinoma. These data should be considered when defining surgical and histological quality criteria after CRT and should be taken into account when evaluating prognosis in those patients.

25. Number and ratio of metastatic lymph nodes an independent prognostic factor regardless of neoadjuvant chemoradiation or lymphadenectomy extent

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Background. The accuracy of the 6th UICC/TNM classification is suboptimal, especially when not taking into account neoadjuvant therapy and lymphadenectomy extent.

Aim. To investigate whether the number of lymph nodes metastasis (LNMs) and the ratio between metastatic and examined lymph nodes are better prognostic factors as compared to traditional staging systems in patients with esophageal carcinoma.

Methods. For 536 patients who had undergone curative en bloc esophagectomy, in whom 51.5% ($n = 276$) received neoadjuvant chemoradiation, LNMs were classified according to the 6th UICC/TNM classification and systems based on the number (≤ 4 and > 4) or the ratio (≤ 0.2 and > 0.2) of LNMs. Survival of the respective stages, predictors of survival and influence of both

chemoradiation and number of examined lymph nodes were studied.

Results. After a median follow-up of 50 months, the 5-year survival rates were 47% for the entire population, significantly poorer for patients with >4 LNMs (8% vs 53%, $P < 0.001$) or a ratio of LNMs >0.2 (22% vs 54%, $P < 0.001$). After adjustment for confounding variables, a number of LNMs >4 and a ratio of LNMs >0.2 were the only predictors of poor prognosis. The prognostic role of both the number and the ratio of LNMs was maintained whether patients received neoadjuvant chemoradiation or not. Moreover LN ratio is shown to be more accurate for inadequately staged patients (<15 examined lymph nodes) whereas the number of LNMs is pertinent for adequately staged patients (≥ 15 examined lymph nodes).

Conclusion. Staging systems for esophageal cancer that use the number (4 or >4) and the ratio (0.2 or >0.2) of LNMs have greater prognostic importance than current staging systems because of the good stratification of the groups and their clinical utility, taking into account neoadjuvant therapy and lymphadenectomy extent.

26. Additional Value Of External Ultrasonography Of The Neck After Normal CT- and PET-Scanning In The Preoperative Assessment Of Patients With Oesophageal Cancer

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Background. Lymphatic dissemination of a (non-cervical) esophageal tumour to the neck is considered as distant metastasis precluding curative surgery. CT-scan of neck, chest and abdomen and positron emission tomography (PET) are part of the preoperative diagnostic work-up to detect haematogenous dissemination. Additionally, lymphatic dissemination to the lower neck can be assessed by external ultrasonography (US) in combination with fine needle aspiration (FNA).

Aim. The aim of this study was to determine the additional value of US to detect lymphatic metastasis to the neck after normal CT-/PET-scanning.

Methods. Between January 2003 and December 2005, 306 patients were analysed for esophageal cancer. A total of 233 patients underwent both CT and US of the neck. PET was performed in 109 patients. FNA was only performed if US reported suspected lymph nodes. US+FNA was defined as gold standard.

Results. In 176 of 233 patients (76%) CT did not identify any suspected cervical nodes, but US disagreed in 36. In 9 patients FNA confirmed metastasis, resulting in an additional value of US after normal CT-scanning of 5% (9/176). In 74 of 109 patients (68%) PET and CT did not identify any suspected nodes, but US disagreed in 11 of them. In 3 patients FNA confirmed metastasis, resulting

in an additional value of US after normal PET and CT of 4% (3/74).

Conclusions. Considering its non-invasiveness and wide availability in combination with the importance of the potential therapeutic consequences, US of the neck should be part of the routine diagnostic work-up in patients with oesophageal cancer.

27. Carcinoma Of The Hypopharynx And Cervical Esophagus. Is First Line Chemoradiation The Gold-Standard?

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Background. The role of surgery in the treatment of carcinoma of the hypopharynx and cervical esophagus changed over the last ten years. Avoiding an invalidant surgical treatment with a mortality rate of 9% and a 5-year survival of 20–39%, first line chemo-radiotherapy was introduced in the treatment of this type of cancer.

Aims. Evaluation of the results of multimodal treatment of the hypopharynx and cervical esophagus cancer.

Methods. We retrospectively reviewed the records of 121 not metastatic and previously untreated patients with hypopharynx and cervical esophagus carcinoma observed from 1995 to 2006. The treatment of choice was chemo-radiotherapy, reserving surgery in case of incomplete clinical response or recurrence after complete response.

Results. 96 (79%) patients underwent chemo-radiotherapy: complete response (CR) was achieved in 33 patients (35%), partial (PR) in 28 (29%), 35 (36%) had no response (NC or PD).

Surgery was performed in only 8 (24%) patients in the CR group, in 17 (63%) in the PR group and in 4 (11%) in the NC-PD group. In responsive patients (CR-PR), 1- 3- 5- year survival was 89.8%, 39.4% and 35.7% respectively, while in patients with CR 1- 3- 5- year survival was 96.8%, 56.8% and 56.8% respectively. In non-responsive patients, 1- and 2- year survival was 17% and 0% respectively.

Conclusion. In patients with cancer of the hypopharynx and cervical esophagus, chemo-radiotherapy is the treatment of choice, reserving surgery (salvage surgery) to non-responsive patients or to patients with relapse after a primary complete clinical response.

28. The Changing Use Of Palliative Chemotherapy For Recurrent Oesophageal Cancer

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Background. Palliative chemotherapy is often recommended in treating recurrent oesophageal cancer with

limited evidence of the benefit it confers. Our aim was to define its use and benefit.

Methods. Patients with recurrent oesophageal cancer diagnosed between 1991–2006 following radical surgery were identified from our database.

Results. 197 patients were studied: 145 male, median age at recurrence: 64.9 (31.6–82.5) years. Median time to disease recurrence was 12.4 (1.3–117) months. Median survival from recurrence was 2.7 (0–93.2) months. Dividing this population into 2 cohorts showed an increase in the use of chemotherapy. Prior to 1999 (n=58), 12% of patients received chemotherapy, while from 1999 (n=139) this rose to 20%. For patients having chemotherapy (n=35), median survival was 12.3 (2.4–75.8) months, patients having non-chemotherapy palliative treatment (n=88), median survival was 3.2 (0–93.2) months, and for patients having no active intervention (n=74) median survival was 1.3 (0–16.2) months. Chemotherapy patients were significantly younger ($p<0.001$). Median duration of chemotherapy was 3.2 (0.5–9.2) months. Median survival for these patients

outside their chemotherapy treatment was 7.0 (1.1–73.5) months; this still being statistically significant ($p<0.001$). 12 patients experienced considerable side effects, 4 requiring chemotherapy to be modified or stopped.

Conclusion. An increase in palliative chemotherapy use for recurrent oesophageal cancer was observed. Whilst survival is significantly improved, almost a third of survival time was spent receiving chemotherapy with several patients experiencing co-morbidity. Further studies assessing both quality and quantity of life are needed to fully evaluate the use of palliative chemotherapy and to identify those most likely to benefit.

17:30: The TPJ Hennessy Lecture

Professor GC O'Sullivan

The Future of Oesophageal Cancer Treatment

18:30: General Assembly

Saturday 15 September

09:00–10:15: V. Peri-operative Management

29. The Influence Of Non-Intensive Care Management And Fluid Prescription On Post-Operative Morbidity In Esophagectomy

Mark Quinn, Conor J Shields, Patrick Broe
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Background. Oesophagectomy is associated with a significant incidence of morbidity and death, and by convention requires post-operative admission to an intensive treatment unit (ITU).

Aims. We present our experience of managing these patients in a surgical ward environment, with an emphasis on peri-operative fluid restriction, and immediate post-operative extubation.

Methods. A prospectively maintained, single-institution database of forty three consecutive patients who underwent oesophagectomy between January 2005 and May 2007 was analysed. Data recorded included patient demographics, fluid management, post-operative morbidity, type of resection, length of stay, and overall survival.

Results. The median patient age was sixty three years (range 30–79), with a male:female ratio of 4:1. Sixteen patients (37%) were admitted to ITU from theatre, while twenty seven (63%) were managed on a surgical ward. thirty day mortality was 5%, while overall morbidity was 19%. Mortality and overall incidence of complications

were not influenced by management in a ward setting, however the incidence of lower respiratory tract infection was significantly reduced ($P = 0.034$). The median volume of fluid infused was considerably greater in ITU than ward patients (4322ml vs 2788ml per day, $P<0.01$). There was a significant correlation between the amount of fluid prescribed in the first five post-operative days and morbidity ($r = 0.618$, $P<0.01$), and length of stay ($r = 0.409$, $P=0.01$).

Conclusion. Management of this patient cohort in a ward environment facilitates significant reductions in fluid prescription, impacting favorably upon respiratory infection rate and length of stay.

30. Postoperative Pulmonary Morbidity following Esophagectomy is Decreased by Reducing the Perioperative Fluid Balance

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Department of General Surgery¹ and Anaesthesiology², Erasmus Medical Centre Rotterdam, The Netherlands

Background. A reduction in fluid administration has been shown to benefit patient recovery following abdominal surgery. We investigated whether a reduction in intraoperative fluid balance could positively influence postoperative morbidity following esophagectomy.

Methods. We introduced an anaesthetic regimen, aimed at improved pulmonary function and stable hemodynamic conditions, based on early extubation and a controlled fluid and vasopressor regimen.

Results. From June 2005 until September 2006, 83 patients were treated according to the new regimen (NR) and compared to a similar number of patients from the same period in 2003–2005 (standard regimen: SR). Blood loss, urine output and use of vasopressive agents were similar in both groups. Significantly less fluid was administered in the NR group, resulting in a net positive fluid balance of $3,5 \pm 0,2$ litre vs. $5,1 \pm 0,2$ litre in the SR group ($P < 0.05$; mean $\pm$ SEM). pneumonia was found in 26% (NR) vs. 42% in the SR group ($P < 0.05$). There was no difference in surgical morbidity. Hospital mortality was 5% (NR) vs. 9% (SR). ICU stay and total hospital stay were similar in both groups.

Conclusions. With the introduction of an new regimen directed at reduced fluid balance and maintaining blood pressure at a certain level, postoperative pulmonary and overall 30-day morbidity could be significantly reduced in patients undergo an esophagectomy.

31. Thirty-Day Mortality After Esophageal Resection Is Reduced Following Introduction Of A Closed Format Intensivist Led ICU

Linetta Koppert^{1, 2}, Iwan Meynaar⁴, Michel Wouters³, Peter Tangkau⁴, Peter De Graaf², Tom Karsten², Ewout Steyerberg³, Laurents Stassen²
Surgery, Erasmus University Medical Center, Rotterdam¹, Surgery, Reinier de Graaf Hospital, Delft², Surgery, The Netherlands Cancer Institute, Antoni van Leeuwenhoek Hospital, Amsterdam³, Intensive Care Unit, Reinier de Graaf Hospital, Delft⁴, Public Health, Erasmus University Medical Center, Rotterdam⁵, The Netherlands.

Background. Surgical resection is the only curative therapy for oesophageal carcinoma but is associated with considerable postoperative morbidity and mortality. We analysed preoperative risk factors and outcome after oesophagectomy in a consecutive series of 1879 patients in a university hospital.

Methods. Since 1978, 1879 oesophageal cancer patients underwent surgery with curative intent. Patient characteristics, operative details and postoperative outcome were collected in a prospectively recorded database. Transthoracic oesophagectomy (TTE) was preferred for (squamous cell) carcinomas of the upper and middle esophagus ($n=495$, 27%), transhiatal oesophagectomy (THE) was preferred for (adeno)carcinomas of the distal esophagus ($n=1029$, 55%).

Results. Fourteen % of patients was irresectable at exploration, this number decreased in time. There was 33% postoperative complications, this number decreased in time as well. Patients suffered from comorbidity in 48%, which increased in time.

The most frequent surgery-related complications after resection recurrent laryngeal nerve palsy (13%) and anastomotic leakage (10%). The most frequent non-surgical complications were pneumonia and atelectasis (34%). Thoracic duct leakage, delayed passage, ARDS and sepsis occurred more frequently after TTE than after

THE (3% vs 6%, $p=0.10$; 3% vs 0%, $p=0.000$; 9% vs 4%, $p=0.000$; 7% vs 3%, $p=0.018$).

Pulmonary complications were significantly correlated with pulmonary co-morbidity. In-hospital mortality was 4.8 % which was influenced by patients' age and preoperative comorbidity.

Conclusion. In this large consecutive series mortality and morbidity was correlated with preoperative comorbidity and age. There were significantly less postoperative complications after THE than following TTE but this difference did not influence postoperative mortality.

32. Effects Of Neoadjuvant Therapy On Perioperative Morbidity In Elderly Patients Undergoing Esophagectomy For Esophageal Cancer

Giuseppe Portale¹, Alberto Ruol¹, Carlo Castoro², Vanna Chiarion Sileni³, Luigi Corti⁴, Caterina Boso⁴, Matteo Cago², Ermanno Ancona²
Gastroenterological and Surgical Sciences, Clinica Chirurgica III¹, Surgery, Istituto Oncologico Veneto², Oncology, Istituto Oncologico Veneto³, Radiotherapy, Istituto Oncologico Veneto, Padova⁴, Italy

Background. The ageing of the population and a longer life expectancy have led to an increased number of elderly patients presenting with esophageal cancer and being referred for surgical treatment.

Aim. The aim of this study was to assess the effects of age on the outcome of surgery for esophageal cancer at a single institution.

Methods. Perioperative outcome and long-term survival of patients ≥ 70 years old undergoing esophagectomy between 1992 and 2005 for cancer of the esophagus or esophagogastric junction were compared with findings in younger patients. Patients who had an abdominal procedure only were excluded from the analysis.

Results. The analysis considered 580 patients < 70 years old and 159 ≥ 70 years. Clinical presentation was similar in the two groups and so were postoperative morbidity and mortality, despite a significant difference in perioperative risk factors. Irrespective of age, overall survival was 34% at 5 years for all patients and 37% for patients with R0 resection.

Conclusions. Increased experience and refinements in perioperative care can explain the better results of esophagectomy in the elderly in recent years. Short- and long-term outcome after esophagectomy for carcinoma in patients over 70 years are comparable with those of their younger counterparts. Advanced age, *per se*, should not be considered a contraindication to esophageal resection.

33. Clinical Outcome Of Perioperative Enteral Immunonutrition For Patients Undergoing Subtotal Oesophagectomy

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Background. Immunonutrition with ω -3 fatty acids (ω -3FA) may improve morbidity by modulating immunosuppression after OGCS.

Aims. To assess the effect of perioperative enteral ω -3FA supplementation on clinical outcome, plasma concentrations of fatty acids and fat-soluble vitamins in OGCS.

Methods. A prospective randomised controlled trial was undertaken (April 2003 to January 2007). Subtotal oesophagectomy patients were randomised to: ω -3FA immunonutrition 7 days pre- and post-operatively (arm 1), isocaloric and isonitrogenous standard enteral nutrition 7 days pre- and post-operatively (arm 2) with a control group receiving post-operative supplementation only. Postoperative infective complications (IC), hospital stay, mortality and nutritional status (triceps skin fold thickness, mid-arm muscle circumference) were recorded. Fatty acid and vitamin plasma concentrations were measured 7 and 1 days pre- and post-operatively using gas chromatography.

Results. Of the 169 patients recruited, 11 were excluded. Groups were matched for age, malnutrition, neo-adjuvant chemotherapy and co-morbidity (arm 1 n=52, arm 2 n=50, arm 3 n=56). Arm 1 had higher levels of ω -3FA over the 4 time periods ($p<0.001$). The ratio of ω -6FA: ω -3FA was 1.9:1, 4.1:1 and 4.8:1 a day pre-operatively in arms 1, 2 and 3 respectively ($p<0.001$). Patients developing IC were 27(52%), 30(60%) and 27(48%) patients in arms 1, 2 and 3 respectively ($p=ns$). Total number of infective complications included 45, 45 and 42 respectively ($p=ns$). Hospital stay, mortality and nutritional status were comparable ($p=ns$).

Conclusions. Despite higher plasma concentrations of ω -3FA and lower ω -6FA: ω -3FA ratios, perioperative ω -3FA immunonutrition does not appear to improve clinical outcome following OGCS.

34. Improvement Of Long-Term Survival After Centralisation Of Esophageal Cancer Surgery In A Population-Based Study

Leon van de Schoot¹, Lonneke V van de Poll -Franse², Jan-Willem Coebergh^{2, 4}, Jan A Roukema³, Harm J Rutten¹, Grad AP Nieuwenhuijzen³ Surgery, Catharina Hospital, Eindhoven¹, Comprehensive Cancer Centre South (IKZ), Eindhoven², Surgery, St Elisabeth Hospital, Tilburg³, Public Health, Erasmus University Medical Centre, Rotterdam⁴, The Netherlands

Background. Several efforts have been made to improve survival after surgery for esophageal carcinoma. Centralisation of esophageal cancer surgery has been proven to decrease morbidity and post-operative mortality. Literature about the effect of centralisation on long-term survival is scanty.

Aim. Determine the effect of centralisation of esophageal cancer surgery on long-term survival.

Methods. The database of the population-based Eindhoven Cancer Registry was used to select all patients with esophageal cancer surgery between January 1990 and December 2004. Follow-up was complete until January 1st 2006. In period 1 (1990–1998) esophageal cancer surgery was carried out in all 10 community hospitals. In period 2 (1999–2004) agreements on centralisation of esophageal cancer surgery were made. We evaluated patient and tumour characteristics, pattern of referral and survival.

Results. The study population consisted of 217 patients (period 1) and 293 patients (period 2) respectively. Groups were comparable for age, gender, tumour stage, co-morbidity and socio-economic status. In period 2, a significant increase was noted of adenocarcinoma (75% vs 58%) and (neo-)adjuvant treatment strategies (75% vs 91% surgery alone). Referral of patients to two regional centres was significantly increased from 26% in period 1 to 69% in period 2 ($p<0.0001$). An intention-to-treat survival analysis showed a significant increase in 1-, 3- and 5-year overall survival when comparing period 1 and period 2 ($p<0.0001$). Period 2 was one of the strongest risk factors (Hazard ratio 0.70 95%CI 0.56–0.87 $p<0.001$) in a multivariate regression model for mortality.

Conclusion. Centralisation of esophageal cancer surgery can lead to improved long-term survival.

11.00–12:48: VI. Surgery

35. Outcome Of Esophagectomy For Cancer In A Consecutive Series Of 1879 Patients

Vera Rempe-Sorm, Linetta B. Koppert, Khe T.C. Tran, Conny Vollebregt, H.W. Tilanus Surgery, Erasmus University Medical Centre, Rotterdam, The Netherlands

Background. Surgical resection is the only curative therapy for oesophageal carcinoma but is associated with considerable postoperative morbidity and mortality. We analysed preoperative risk factors and outcome after oesophagectomy in a consecutive series of 1879 patients in a university hospital.

Methods. Since 1978, 1879 oesophageal cancer patients underwent surgery with curative intent. Patient characteristics, operative details and postoperative outcome were collected in a prospectively recorded database. Transthoracic oesophagectomy (TTE) was preferred for (squamous cell) carcinomas of the upper and middle oesophagus (n=495, 27%), transhiatal oesophagectomy (THE) was preferred for (adeno)carcinomas of the distal oesophagus (n=1029, 55%).

Results. Fourteen % of patients was irresectable at exploration, this number decreased in time. There was 33% postoperative complications, this number decreased in time as well. Patients suffered from comorbidity in 48%, which increased in time.

The most frequent surgery-related complications after resection recurrent laryngeal nerve palsy (13%) and anastomotic leakage (10%). The most frequent non-surgical complications were pneumonia and atelectasis (34%). Thoracic duct leakage, delayed passage, ARDS and sepsis occurred more frequently after TTE than after THE (3% vs 6%, $p=0.10$; 3% vs 0%, $p=0.000$; 9% vs 4%, $p=0.000$; 7% vs 3%, $p=0.018$).

Pulmonary complications were significantly correlated with pulmonary co-morbidity. In-hospital mortality was 4.8 % which was influenced by patients' age and preoperative comorbidity.

Conclusion. In this large consecutive series mortality and morbidity was correlated with preoperative comorbidity and age. There were significantly less postoperative complications after THE than following TTE but this difference did not influence postoperative mortality.

36. Minimally Invasive Esophagectomy For Cancer: Results On 50 Consecutive Laparoscopic Gastric Mobilization

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Universitaria Pisana, Pisa, Italy

Background. In the last ten years there has been an increasing interest in minimally invasive esophagectomy
Aims. This study was conducted to evaluate feasibility, postoperative outcome and mid term oncological results of laparoscopic gastric mobilization (LGM) during esophagectomy.

Methods. From July 2002 to December 2006 52 patient underwent esophagectomy with LGM. Mean age was 65 year (39–85). The tumor was located on the cardia in 22 pts, on the lower third in 9 patients and on the medium third in 20 pts. Preoperative staging was I=6; IIA=16; IIB=13; III=16. Following LGM, transthoracic esophagectomy was performed.

Results. LGM was completed in 50 patients. 2 conversion were necessary. R0 resection was achieved in all patients. All patients were extubated immediately after the operation and managed in post-operative care unit for a mean time of 3 days (range 2–10) We have no postoperative mortality. 13 patients (26%) developed complications. Anastomotic leakage occurred in 2 patients which were treated conservatively. 2 patient (4%) had a respiratory complications. 4 patients had pylorospasm at radiological examination and underwent to an endoscopic balloon dilatation. A mean of 22,1 (11–39) lymph nodes were analysed. At a median follow up of 12 months (1–56) actuarial survival at 1 and 2 years are respectively 91% and 75%.

Conclusions. Esophagectomy with laparoscopic gastric mobilization is feasible and safe. Respiratory morbidity seems to be reduced when compared with totally open esophagectomy. Mid-term oncologic results seems comparable to those of conventional surgery. Randomised trials are necessary to confirm the possible respiratory advances induced by minimally invasive approach.

37. The First Results Of Thoracoscopic Assisted Transhiatal Esophagectomy In Prone Position For Carcinoma Of The Esophagus

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Background. Controversy exists about the best surgical treatment for esophageal carcinoma. Transthoracic esophagectomy with extended lymphadenectomy is associated with longer disease free survival as compared to transhiatal esophagectomy (THE), but at the cost of a higher incidence of postoperative complications.

Aims. To obtain the advantages of a thoracic approach we introduced a thoracoscopic technique (TSE). Here, we present the first results obtained with this technique and compare these with patients treated with classic THE.

Methods. One hundred patients undergoing resection for esophageal cancer were evaluated retrospectively. In 18 patients a TSE was performed (group I) and in 82 patients a classic THE (group II).

Results. Demographic characteristics were similar in both groups. TSE was associated with longer median duration of surgery (group I: 273 min and group II: 165 min, $p<0.001$). Median hospital stay was 18 days in group I and 15 days in group II. Pulmonary complications were: group I pneumonia $n=4$ (22%), pleuraempyema $n=1$ (6%) and chylous leakage $n=4$ (22%) and group II pneumonia $n=9$ (11%), pleuraempyema $n=8$ (10%) and chylous leakage $n=1$ (1%). Postoperative mortality was similar in both groups (6%). In group I lymphadenectomy was more extensive (13.0 vs 7.0 nodes, $p<0.001$). R0 resection was obtained in 100% of group I and in 87% of group II.

Conclusion. TSE is associated with a significantly higher amount of harvested lymph nodes and more R0 resections as compared to classic THE. Unfortunately, TSE is associated with significantly more chylous leakage and more pulmonary complications.

38. Clinical Impact Of Tumour Involvement Of The Proximal Anastamotic Doughnut In Oesophagogastric Cancer Surgery

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Background. Stapled upper gastrointestinal anastamotic doughnuts are frequently sent for histological analysis. The usefulness of this practice is not clear.

Aims. To assess the impact of tumour involvement of the doughnut on clinical practice. Other factors associated with doughnut invasion and the effect on overall patient survival were also analysed. Published colorectal cancer

surgery data does not support the routine analysis of the doughnuts following anterior resections.

Methods. The clinico-pathological details of 492 patients who underwent potentially curative oesophagogastric resection for cancer with a stapled proximal anastomosis between 1994 and 2006 in two specialist centres were retrospectively analysed. Univariate, multivariate and Kaplan-Meier survival analyses were carried out.

Results. There were 381 adenocarcinomas, 106 squamous carcinomas, 4 adeno-squamous and 1 leiomyosarcoma. The median age was 65 years. Five percent (24/492) of doughnuts were histologically involved with malignancy. Microscopic involvement of the proximal resection margin, local lymph node metastasis (N0 vs N1) and lymphatic invasion (all $p < 0.0005$) were the three factors observed within the main resected specimen to be independently associated with doughnut positivity in a multivariate analysis. However, on the logistic regression prediction table, these three factors failed to predict proximal doughnut invasion. In addition, doughnut status was an independent predictor of survival ($p = 0.002$) and its involvement was associated with worse prognosis.

Conclusion. Although uncommon (5%), doughnut involvement is an independent predictor of survival. In contrast to colorectal surgery, histological analysis of the oesophageal doughnut provides important prognostic information that is not predicted by adverse features within the main resected specimen.

39. Age Does Not Affect Outcome And Survival After Esophagectomy For Esophageal Cancer

Giuseppe Portale¹, Alberto Ruol¹, Carlo Castoro², Matteo Cagol², Rita Alfieri¹, Sabrina Rampado¹, Silvia Michieletto¹, Ermanno Ancona²
Gastroenterological and Surgical Sciences, Clinica Chirurgica III¹, Surgery, Istituto Oncologico Veneto², Padova, Italy

Background. The ageing of the population and a longer life expectancy have led to an increased number of elderly patients presenting with esophageal cancer and being referred for surgical treatment.

Aim. The aim of this study was to assess the effects of age on the outcome of surgery for esophageal cancer at a single institution.

Methods. Perioperative outcome and long-term survival of patients ≥ 70 years old undergoing esophagectomy between 1992 and 2005 for cancer of the esophagus or esophagogastric junction were compared with findings in younger patients. Patients who had an abdominal procedure only were excluded from the analysis.

Results. The analysis considered 580 patients < 70 years old and 159 ≥ 70 years. Clinical presentation was similar in the two groups and so were postoperative morbidity and mortality, despite a significant difference in perioperative risk factors. Irrespective of age, overall survival was 34% at 5 years for all patients and 37% for patients with R0 resection.

Conclusions. Increased experience and refinements in perioperative care can explain the better results of esophagectomy in the elderly in recent years. Short- and long-term outcome after esophagectomy for carcinoma in patients over 70 years are comparable with those of their younger counterparts. Advanced age, *per se*, should not be considered a contraindication to esophageal resection.

40. Locally Advanced Squamous Cell Cancer Of The Cervical Oesophagus: The Role Of Multimodal Therapy

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Introduction. Hypopharynx and cervical oesophagus represent a critical location for a squamous cell carcinoma, a neoplasm that usually requires extensive surgery (pharyngo-laryngo-oesophagectomy). In the last decade neoadjuvant chemo-radiotherapy was reported to be beneficial in the treatment of locally advanced squamous cell oesophageal cancer.

Methods. Between January 1998 and January 2007, in our department 114 patients with locally advanced (T3-4) squamous cell oesophageal cancer received preoperative chemo-radiotherapy. In 43 of the cases the tumour was localised in the cervical oesophagus. Patients received preoperative irradiation 3500 cGy in 250 cGy fractions and simultaneously cisplatin and 5-FU chemotherapy was administered. After a four-weeks-long treatment free period restaging examinations were carried out and patients considered resectable were submitted to surgery.

Results. In patients with cervical oesophageal cancer 29 of 43 (67%) underwent oesophageal resection or pharyngo-laryngectomy. In 14 out of 29 resected specimens (48%) complete histopathological remission was observed. The perioperative mortality and anastomosis leaks were the same: 4 (13%) out of 29 resected patients. The median survival was 22 months and the R0 resection rate was 84%. In 15 cases a larynx preserving pharyngo-oesophagectomy were performed and in 10 cases for reconstruction a free jejunal graft were used.

Conclusion. In 25 cases neoadjuvant chemoradiotherapy proved to be suitable to achieve tumour regression and render pharyngo-laryngo-oesophagectomy unnecessary. It seems that upper third oesophageal cancer has superior sensitivity to multimodal treatment (48% complete remission) therefore our results support a new prognostic point of view in oesophageal cancer treatment in favour of upper third oesophageal cancer.

41. Chylothorax After Transthoracic Esophagectomy For Cancer: The Role Of Prophylactic Thoracic Duct Ligation

Matteo Cagol¹, Alberto Ruol², Carlo Castoro¹, Rita Alfieri², Silvia Michieletto², Chiara Tosolin², Gianpietro Zanchettin², Ermanno Ancona¹

IRCCS, Istituto Oncologico Veneto, Padua¹, Scienze Gastroenterologiche Chirurgiche, Clinica Chirurgica III2, Padua, Italy

Background. Chylothorax after esophagectomy for cancer is an uncommon but threatening postoperative complication. It has been reported that chylothorax may increase the incidence of others postoperative complications, particularly respiratory deficiencies, and postoperative mortality. The treatment is still controversial. Conservative management with thoracic drainage and total parenteral nutrition is possible, but this treatment significantly increases postoperative in-hospital stay. Surgical treatment, with early thoracic duct ligation, seems to be the treatment of choice.

Aims. To evaluate the results of preventive intraoperative duct ligation.

Methods. From 1980 to 2000, 1389 transthoracic esophagectomies for carcinoma of the esophagus and cardia were performed without thoracic duct ligation. From 2001 en-bloc duct ligation above the diaphragm was performed during the operation in all the patients undergoing transthoracic esophagectomy for cancer.

Results. From 1980 to 2000, chylothorax was observed in 20/1389 (1.4%) patients. 11 were initially managed nonoperatively: 7 required reoperation for persistent high-volume output and 4 had spontaneous resolution. The other 9 patients underwent early reoperation with en-bloc thoracic duct-ligation, significantly reducing in-hospital stay.

From 2001 to 2005, 289 patients underwent transthoracic esophagectomy for cancer and duct ligation during operation was routinely performed. No postoperative chylothorax was observed and no complication was related to duct ligation.

Conclusion. Preventive intraoperative duct ligation seems to be the optimal technique to minimize the risk of chylothorax in patients undergoing transthoracic esophagectomy for cancer and we think that this method should be routinely used.

42. Comparable Mortality And Morbidity With Laparotomy Or Thoracotomy In The Treatment Of Upper Third Gastric Cancer

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Background. Left sided thoracotomy is a controversial approach for surgery of the esophago-gastric junction, as it provides excellent exposure, however some claims with a higher morbidity.

Methods. Between 1993 and 2002 145 patients with upper third gastric malignancy underwent resection. Seventy-seven thoracotomy (group-I), 68 laparotomy (group-II) were done.

Results. The two groups did not differ in the type of resection (89% total and 11% proximal gastrectomy),

radicality of resection (R0/1/2 were 66%, 15% and 19% in group I, compared with 62%, 19%, and 19% in group-II. Extension of lymph node dissection (D1/2/3 in 11%, 86% and 3% in group I and in 22%, 72% and 6% in group II anastomotic technique. UICC TNM stage, median number of lymph nodes removed (16.8 versus 24.0), and the percentage of tumors infiltrating surrounding organs did not differ. In group-I significantly more tumors invaded the esophagus (44 vs 7%) and significantly more resections were performed with splenectomy (63 vs 46%). The overall rate of postoperative complications (45% vs 40%) did not differ, while hydrothorax occurred more often in group-I. No significant difference were found in the rate of anastomotic insufficiency (6.6 vs 7.4 %) and in-hospital mortality (11.3 vs 3.8 %) as well as in mean survival (15.4 vs 21.8 months).

Conclusion. Resections via thoracotomy and laparotomy were performed with comparable radicality, mortality and morbidity. The more frequent occurrence of hydrothorax as well as the slightly but not significantly worse survival in thoracotomy group can well be explained by the significantly higher percentage of tumors invading the esophagus necessitating higher resection and tumors needing splenectomy in this group.

43. The Effect Of Azygos Vein Preservation On Mediastinal Lymph Node Harvesting In Thoracic Esophagolymphadenectomy

*Judith Boone¹, Marguerite Schipper², Ronald Bley¹, Inne Borel Rinkes³, Richard van Hillegersberg³
Surgery¹, Pathology² and Pharmacology & Anatomy³, University Medical Center Utrecht, Utrecht, The Netherlands*

Background. The standard surgical procedure for esophageal cancer is transthoracic esophagectomy with en bloc resection of the azygos vein, thoracic duct and mediastinal lymph nodes. To reduce morbidity of esophagolymphadenectomy, minimally invasive techniques are increasingly being applied. In (robot-assisted) thoracoscopic esophagolymphadenectomy, the azygos vein is generally left in place, as the scopic ligation of the numerous intercostal veins is technically difficult and time-consuming. Moreover, some comparable modifications have been applied in the open transthoracic approach. This could affect the extent of mediastinal lymph node dissection.

Aim. To assess the effect of azygos vein preservation during thoracic esophagectomy on mediastinal lymph node harvesting.

Methods. In 15 human cadavers, a right-sided thoracotomy was performed, followed by esophagectomy with mediastinal lymph node dissection after ligation of the azygos arch (representing the situation in robot-assisted thoracoscopic esophagolymphadenectomy). Subsequently, the remaining azygos vein with surrounding tissue was resected. The number of lymph nodes in both specimens was determined.

Results. A mean of 17.3 (95% Poisson CI 15.3–19.6) lymph nodes was dissected en bloc with the esophagus, and 0.67 (95% Poisson CI 0.32–1.23) around the separately resected azygos vein. The additional azygos vein resection did not add to the number of lymph nodes dissected in 60% (9 out of 15) of cadavers.

Conclusions. The extent of mediastinal lymph node dissection was not substantially affected by leaving the azygos vein in situ. Time-sparing azygos vein preservation in (robot-assisted) thoracoscopic esophagolymphadenectomy may therefore be considered justified.

Poster Presentations

44. The Rapunzel Syndrome Presenting As Anaemic Heart Failure

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Kildare, Ireland*

Background. The Rapunzel syndrome is a rare manifestation of gastric trichobezoar with a ‘tail’ extending into the small intestine and even to the colon.

Case Report. We report the first case presenting as anaemic Heart failure as distinct from typical presentation of abdominal pain, mass or symptoms of intestinal obstruction as reported in previous cases.

Conclusions. Treatment of Rapunzel or large trichobezoar must not be delayed, with surgical removal being the only way of ensuring complete removal. The treatment approach must be multidisciplinary with involvement of Child psychiatric service to exclude any underlying psychological distress if recurrence must be prevented.

45. Laparoscopic Removal Of A Large Gastric Trichobezoar

*Zeini Salam, Vionnet Michel
Surgery, HIB, PAYERNE, VAUD, Switzerland*

Background. Gastric bezoars result from the accumulation of foreign ingested material in the form of masses or concretions. Bezoars are rare, being found in less than 1 percent of patients undergoing upper gastrointestinal endoscopy. A large trichobezoar has been traditionally removed by open surgery, which has entailed an upper abdominal incision. With the advent of laparoscopic surgery, it became feasible to retrieve a foreign body from the stomach without the necessity of a large skin incision in the upper abdomen.

Case report. A 17-year-old girl presenting with abdominal pain, nausea, and appetite loss was admitted and evaluated. Results of an endoscopical gastric showed a large mass in the stomach that extended into the duodenum. Endoscopical removal had been tried twice under general anesthesia and resulted only in the retrieval of the small portion of the trichobezoar in the duodenum. total removal seemed impossible with endoscopic techniques.

Treatment. Laparoscopic removal was then undertaken to avoid the surgical scar in the upper abdomen. The trichobezoar was successfully retrieved through a gastrotomy, using an “endobag”, and was removed via a Small Mac Burney incision, with a minimal risk of contamination throughout the procedure.

Conclusion. This approach may be the treatment of choice for future cases of trichobezoar when surgery is indicated. The authors recommend this approach for the treatment of patients with large gastric bezoars in whom laparotomy is indicated.

46. Black Esophagus: Solving The Riddle

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Background. Acute esophageal necrosis is a rare entity. It is found at endoscopy and the exact etiology stays unknown.

Case Report. We present a series of three patients with “black esophagus”. Ischemia resulting from organ hypoperfusion has been the proposed cause.

Conclusions. Black esophagus is an extremely rare finding in the absence of a definite etiological factor. It can be defined as a dark pigmentation with associated ulceration and histological mucosal necrosis. Differential diagnosis includes ingestion of caustics, fungal infection, melanogenesis, malignant melanoma etc. This is more of a diagnosis of exclusion and can be confirmed after biopsy and culture sensitivity. However, in acute condition biopsy may have a possible risk of esophageal perforation.

47. Esophageal Perforation: A Ten Year Experience

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Background. Esophageal perforation is a rare but dramatic condition with a mortality up to 60%. The continuing onset of new mini-invasive techniques is making the iatrogenic etiology the first cause of esophageal rupture.

Aim. Review our experience and literature.

Methods. a retrospective analysis of esophageal perforations treated from 1998 to 2007 in our Institution was made.

Results. A total of 12 patients was treated. Median age was 64.3 years old. 6(50%) perforations were iatrogenic, 3(25%) by foreign body ingestion and 3(25%) Boerhaave's Syndromes. 4(33,3%) patients were perforated in the neck, 5(41,7%) in the chest and 3(25%) in the abdomen. 4 patients (group A) were treated within 24 hours and 8 (group B) after 24 hours. 3(25%) patients

underwent primary repair, 3(25%) conservative treatment, 5(41,7%) esophageal exclusion and 1(8,3%) esophagectomy and reconstruction. Respectively in group A and B mortality was 0 vs 12,5%, post-operative morbidity 50 vs 75%, need for reintervention 25 vs 50%. Mean hospital stay was 57,2 days.

Conclusions. Early diagnosis and treatment are key-points for a better prognosis in patients with esophageal rupture. Good results are also possible in event of late diagnosis, but an accurate evaluation is need for the choice of the best treatment, considering the need for sepsis drainage and for preservation of the native esophagus and of a compromised patient.

48. A Quantitative Descriptive Study Of Quality Of Life With Dyspepsia And Gastro-oesophageal Reflux

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Background. Dyspepsia and gastro-oesophageal reflux are common conditions requiring significant health care resources. The primary impact of symptoms is on quality of life and lifestyle factors play a significant role in alleviation and causation of symptoms. Patient perspectives of health related quality of life is important in tailoring this advice.

Aim. To describe the health related quality of life of patients who attend gastroenterology out-patients with dyspepsia and gastro-oesophageal reflux.

Methods. A quantitative descriptive study was undertaken to examine demographic characteristics and build a profile of a population of patients. QOLRAD, a previously validated questionnaire was used to measure the impact of the symptoms on vitality, food and drink, sleep, emotional distress and physical and social function on a seven point Likert scale. A sample of 97 respondents was obtained from a population of patients who attend out-patients.

Findings. 59.8% of respondents were female and 47.4% aged between eighteen and thirty nine. 62.8% were currently or had previously been smokers, 74.2% drank alcohol whilst 36.1% considered themselves overweight. The scores generated demonstrate sub-optimal health related quality of life with vitality, food and drink and emotional distress generating the lowest mean scores of 4.39, 4.52 and 4.76 respectively. A total of 53.6% had not obtained lifestyle advice from any health care professional.

Conclusion. The data generated demonstrates the dearth of lifestyle advice pertinent to this disease given to patients. The study findings can be used to tailor the lifestyle advice and support provided to assist in enhancing health related quality of life in this population of patients.

49. Prospective Randomised Trial Comparing The Efficacy Of Daily PPI Therapy With On-Demand Therapy In Patients With GERD Presenting Supra-Esophageal Symptoms

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Background. Patients with GERD usually require long-life PPI treatment. Due to variety of symptoms' intensity also treatment requirements differ in this group of patients.

Aims. The study was aimed to evaluate the efficacy and cost-effectiveness of PPI daily therapy with Omeprazole 20mg in comparison to on-demand therapy in patients with supra-esophageal reflux symptoms.

Methods. 60 patients with diagnosed reflux disease were included in the study. They had been suffering from supra-esophageal symptoms for at least three months. All of them were treated with Omeprazole 20mg b.i.d. for eight weeks After finishing successful treatment patients were randomised into two equal subgroups: 1-taking Omeprazole "on-demand", 2-taking Omeprazole 20mg daily. The intensity of symptoms was assessed with Visual Analogue Scale at the baseline, as well after 2, 5 and 8 months of therapy.

Results. No statistically significant differences in the symptoms' intensity between groups were observed. 83% of patients in the group 1 and 90% of patients in the group 2 were completely satisfied with treatment results. The patients treated on-demand took on average Omeprazole each 2 days.

Symptoms' intensity in VAS during the treatment		
	on-demand therapy	daily therapy
baseline	5.4 +/- 1	5.2 +/- 1.5
After 2 months	0.9 +/- 0.8	0.9 +/- 0.8
After 5 months	1.4 +/- 1.1	1.0 +/- 0.9
After 8 months	1.3 +/- 1.0	1.1 +/- 0.9

Conclusions. In a six-month follow-up on-demand therapy shows similar efficacy as the daily therapy in patients with GERD and supraesophageal symptoms. It is also more cost-effective.

50. Effect Of Weight Reduction On Symptoms' Intensity In Patients With Gerd And Overweight

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Background. One of important factors contributing to development of both reflux symptoms and oesophagitis is overweight. Even a little weight gain can cause aggravation of reflux symptoms.

Aims. The study aimed to assess effect of weight reduction on symptoms' intensity and symptoms' relapse in patients with GERD and overweight.

Methods. 90 consecutive patients with diagnosed GERD and overweight were included in study. The exclusion criterion was oesophagitis C and D. Patients were advised how to reduce weight (diet and life style indications). They received initial treatment with 20mg Omeprazole for 6 weeks. BMI and symptoms' intensity (with use of Visual Analogue Scale) were assessed at the baseline, after 6 weeks and 3 months. Results were compared between patients who lost weight (group 1), gained weight (group 2) and who did not change it (group 3).

Results. 36 patients lost weight with a mean of 3.0kg, 17 gained weight with a mean of 3.5kg and 37 did not change weight. At the baseline mean BMI and i-symptoms' intensity were comparable between groups. After 3 months mean symptoms' intensity in the group 1 was significantly lower than in groups 2 and 3, 2.8 ± 1.2 vs 3.8 ± 1.1 vs 3.5 ± 1.2 , respectively ($p < 0.05$). Symptoms' relapse occurred in 19% of patients from group 1, 59% of group 2 and 43% from group 3 ($p < 0.05$).

Conclusions. Even a small weight loss may contribute to the improvement of reflux symptoms' control and can reduce the number of reflux relapses.

51. Long Term Results Of Surgery For Paraesophageal And Mixed Types Of Hiatus Hernias

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Background. To assess the long-term results of one center in which particular attention was paid to the length of the oesophagus and the reinforcement of the diaphragmatic pillars while performing surgery.

Methods. In the period 1980–2006, 85 patients were operated upon. The reinforcement of the hiatoplasty, more often with dacron pledgets was performed in 75%. The Collis procedure was performed in 21.17 %. 1 patient(1.17%) died for Collis fistula, 1 patient(1.17%) had partial intrathoracic migration of the gastroplasty and was reoperated upon five days after, 3 patients (3.5%) had pleuric effusion, 1 patient(1.17%) had atrial fibrillation, 1 patient(1.17%) had PNX. Patients were periodically controlled with clinical interview, UGI tract endoscopy and barium swallow.

Results. The median follow up of 84 months. Hiatus hernia relapse occurred in the whole in 7.3 % and in detail in 0 % of thoracic, 10.5% of laparotomic, 0% mini-invasive, 15% of not reinforced hiatoplasty, in 4.68% of reinforced hiatoplasty, 8.69% in standard antireflux procedures and in 0% Collis + antireflux

procedures. According to symptoms and oesophagitis results were excellent and good in 84.3%, fair (mild symptoms and hyperemia) in 10.9% and poor (reflux symptoms and or dysphagia + erosive oesophagitis) in 4.8%. In the whole poor results (symptoms + oesophagitis and /or hernia relapse) occurred in 7.3%.

Conclusion. Long-term results of surgery for complex hiatus hernias are satisfactory if careful attention is paid to short oesophagus and the diaphragmatic pillars reinforcement. The mini-invasive techniques appear valid but need further follow up.

52. The Gastroesophageal Prolapse In Gerd: Clinical Patterns And Surgical Outcome

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Aims. To assess the clinical profile of patients with gastro-esophageal prolapse and GERD and the outcome of surgical therapy.

Methods. Since 1983 to 2006, 50 patients, mean age 48.84, r. 27–73 were observed. The severity of symptoms and Reflux esophagitis were graded from 0 to 3. The anatomy of the ge-junction was assessed by barium swallow.

Results. Median symptoms duration was 51 months (r. 24–300). Epigastric pain was in 98% of pts. Belching or gagging in 70% (35/50), S1=38, 76%; S2=11, 22%, SR3=31, 62%; SR2=19, 38%. Reflux esophagitis in 94% (47/50; E1=15, 30%; E2= 21, 42%; E3=11, 22%). At barium swallow 18 pts (36%) had normal anatomy, 11 (22%) had Sliding Hiatus Hernia, while in 21 pts (42%) the oral migration of the ge-junction. Nissen-Fundoplication was performed in 28 (56%) with 2 Collis techniques. No mortality, morbidity (7.1%). (Median FU 15 months, r 6–192). 22 patients underwent medical therapy (Median FU 60 months, r 24–120). Postoperative symptoms and reflux esophagitis improved statistically after surgery and after medical treatment (Preoperative versus Postoperative $p = 0.000$).

In the comparison between surgical versus medical patients statistically significant differences were observed with regard to severity of pre-treatment reflux symptoms ($p = 0.034$) and with regard to post-treatment clinical evaluation of symptoms and esophagitis ($p = 0.000$).

Conclusions. Epigastric pain, belching and gagging seem to be related to the g-e prolapse because they are reduced more by surgery than by antacid therapy. In g-e prolapse+GERD, surgery is more effective than medical therapy.

53. A Meta-analysis Of Methylene Blue Directed Biopsies Versus Random Biopsies In Surveillance Of Barrett's Oesophagus

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Background. Barrett's Oesophagus is considered a pre malignant condition. Close monitoring of the area for the occurrence of dysplasia is useful in early detection and subsequent management. Use of methylene blue directed biopsies has been advocated to aid the diagnosis. The aim of this analysis was to compare the sensitivity and specificity of random biopsies with that of methylene blue directed biopsies.

Methods. A Cochrane search was performed for publications on surveillance in Barrett's oesophagus. Out of 22 clinical trials addressing the diagnosis of dysplasia in Barrett's oesophagus, 7 studies comprising 379 patients were found suitable for meta analysis. They compared the diagnostic yield of methylene blue directed biopsies and random four quadrant biopsies.

Results. Methylene blue staining was associated with higher level of sensitivity and specificity for specialized intestinal metaplasia. The diagnostic efficacy of conventional biopsies and methylene blue directed biopsies for dysplasia or carcinoma was comparable. Use of endoscopic staining was associated with prolongation of the procedure and furthermore its role in short segment of Barrett's oesophagus was questionable.

Conclusion. Routine use of methylene blue in surveillance of Barrett's oesophagus is unnecessary. Conventional four-quadrant biopsy is equally effective in the detection of dysplasia or carcinoma.

54. Increasing Endoscopic Detection Of Short Barrett's Oesophagus During The Last 12 Years In A University Teaching Hospital

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Background. The incidence of new cases of Barrett's Oesophagus (BO) has increased. It is unclear whether this reflects the global increase of the endoscopy practice or an increase in the incidence of BO, particularly short segment disease.

Aims. To determine the changes in the incidence of endoscopic diagnosis of BO in a university hospital during a 12 years period.

Methods. The data of patients with suspected BO were retrospectively reviewed between January of 1995 to December of 2006 in a university hospital. Cases were considered if the endoscopic oesophageal biopsies confirmed intestinal metaplasia. Patients were categorized as long segments BO (>3cm), short segments (<3cm) and undefined segments (not state the precise length of BO).

Results. In the third period, the new cases BO/1000 endoscopies was significantly greater than the second period (3,81 vs. 6,33 p=0,01), being evident a significant increase on the diagnosis of short segment (0,58 vs 1,98 p<0,01).

	Period 1 1995-1998			Period 2 1999-2002			Period 3 2003-2006		
	n(%BO)	n/10 ³ EGD	IC95%	n(%BO)	n/10 ³ EGD	IC 95%	n(%BO)	n/10 ³ EGD	IC95%
LSBO	9(56,3)	0,71	0,34-1,34	18(54,5)	2,08	1,26-3,28	32 (50)	3,16	2,19-4,46
SSBO	1(6,2)	0,08	0,003-0,44	5(15,2)	0,58	0,20-1,35	20 (31,3)	1,98	1,23-3,05
UnBO	6(37,5)	0,47	0,18-1,02	10(30,3)	1,15	0,57-2,12	12 (18,7)	1,18	0,63-2,07
Total BO	16	1,26	0,74-2,04	33	3,81	2,65-5,34	64	6,33	4,90-8,07
Total EGD	12711			8664			10115		

LSBO:Long-segment BO.SSBO:Short-segment BO.UnBO:BO of undefined length. EGD: Esophago-gastro-duodenoscopy.

Conclusions. During de last four years we have diagnosed 6 times more cases of BO than ten years before. This increase is mainly due to a higher detection rate of short segments of BO.

55. Combination Of Magenstrasse-Mill Operation And Nissen Fundoplication For The Treatment Of A Patient With Morbid Obesity And Barrett's Esophagus

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Aims. The aim of the surgical treatment for morbid obesity is the improvement of health and the better quality of life for these patients. Candidates for these operations should undergo a meticulous preoperative examination and coexisting pathologies should be also treated simultaneously if possible.

Case Report. The case of a 52 years old male patient with morbid obesity (BMI: 41 Kg/m²) and gastroesophageal reflux disease (GERD) is reported. The preoperative gastroscopy showed Barrett's esophagus. Operations that decrease significantly the volume of the stomach by creating gastric stenosis (Mason, Gastric banding) are not compatible with antireflux procedures. Therefore we decided to combine the Magenstrasse-Mill operation with Nissen fundoplication, which is the antireflux procedure of choice for patients suffering from Barrett's esophagus. Magenstrasse-Mill (M-M) operation is an extensive vertical gastropasty that reduces about 80% of the gastric volume, by excluding the fundus and the bigger part of the body of the stomach, without requiring any kind of gastrectomy. No foreign bodies are inserted and no stenoses are performed at the stomach. According to the literature, the results of M-M, concerning the weight loss, are similar with those of the extensive vertical gastrectomy (sleeve gastrectomy). In this case we used the excluded fundus of the stomach in order to perform a Nissen fundoplication.

Conclusion. The combination of M-M and Nissen fundoplication has not been described in the literature according to our knowledge. The follow up period was 16 months, and so far the results are satisfactory, concerning both weight loss and antireflux status.

56. GSTO: New Marker Of Progression From Barrett's Esophagus To Adenocarcinoma

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Background. Barrett's Esophagus (BE) is the most important risk factor for adenocarcinoma of esophagus (AC). Little is known about mechanisms involved in neoplastic progression. Recently, a novel family of proteins has been described with similarities with glutathione transferases (GS-T). This protein, GST-omega (GSTO), show the ability of localizing into the cell nucleus after thermal or radiant stress, as shock proteins. **Aims.** The aim of this study was to evaluate the expression of GSTO in biopsy specimens of BE with different grade of progression.

Methods. From a database of diagnosis of BE we selected 46 patients (44 BE and 2 AC). Non-Invasive Neoplasia (NiN) was evaluated with Rydell's criteria. Esophageal biopsies were immunostained with a rabbit antibody raised against human recombinant GSTO cloned in our laboratory from a human cDNA library.

In 22/44 (50%) BE were no histological evidence of NiN, 7/44 (15.9%) had low-grade NiN (LGNiN) and 9/44 (20.5%) had high-grade NiN (HGNiN). In 6/44 (13.6%) NiN was indefinite. Immunostaining of the specimens with the antibody directed against GSTO showed a prevalent cytosolic localization in 82% of BE without NiN, while BE with LG or HG-NiN and AC showed prevalent nuclear localization (p=0.0005).

Conclusion. Nuclear translocation of GSTO could represent a step in cancer progression and improve the diagnosis of NiN in BE.

Table 1: GST-O cellular localization in BE with different grade of NiN and AC

GSTO	BE	INDEF	LG-NiN	HG-NiN	AC	P
Citoplasmatic	14	3	1	0	0	0.0005
Nuclear and citoplasmatic	5	3	2	0	0	
Nuclear	3	0	4	9	2	

57. No Additional Value Of Bronchoscopy After EUS In The Preoperative Assessment Of Patients With Oesophageal Cancer At Or Above The Carina

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Background. Oesophageal cancer is an aggressive disease with strong tendency to infiltrate into surrounding structures. Tumours at or above the carina are associated with early invasion of the tracheobronchial tree, preclud-

ing curative resection. Endoscopic ultrasonography (EUS) is considered the most accurate diagnostic modality to determine the T-stage. Preoperative work-up for patients with tumours at or above the carina, includes bronchoscopy (with biopsy on indication) to exclude airway invasion.

Aim. Aim of the present study is to determine the additional value of bronchoscopy (with biopsy on indication) for detecting invasion of the tracheobronchial tree after having performed EUS.

Method. Between January 2003 and December 2006, 45 patients were analysed for histologically proven oesophageal cancer at or above the carina. All patients underwent both EUS and bronchoscopy (with biopsy on indication) in the preoperative assessment of local resectability.

Results. Distant metastases were found in 13 of 26 patients (50%) not suitable for curative surgery. In the 13 other patients (50%) local irresectability (T-stage 4) due to invasion of vital structures was described on EUS: in two of these patients invasion of the tracheobronchial tree was described, which was confirmed by bronchoscopy with positive biopsy results

Conclusion. For patients with newly diagnosed oesophageal tumours at or above the carina, no additional value of bronchoscopy (with biopsy on indication) to exclude invasion of the tracheobronchial tree is seen after performing EUS in a specialised centre. Even though based on small numbers, we conclude that bronchoscopy is not indicated if no invasion of the airways is identified on EUS.

58. Oesophageal Reconstruction Modes: Iso- Or Anisoperistaltic, Pre- Or Retrosternal, Gastric Or Jejunal Implantation

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Aims. We propose to identify the surgical technique elements with direct impact on therapeutical results in patients undergoing oesophageal reconstruction for non-malignant diseases. The main operative decisional elements seem to be: thoracic passage of colonic graft in pre- or retrosternal position, iso- versus anisoperistaltic and gastric or jejunal distal implantation mode.

Method. Our study includes 154 patients, who benefitted from colonic oesophageal reconstructions for postcaustic oesophageal stenoses, between 1981–2006.

Results. Therapeutic results were evaluated by clinical monitoring, endoscopy, X-ray control and scintigraphic oesophageal clearance and by using a clinically complex score.

Conclusions. We note that, although the peristaltic pattern of the graft still exists, it has a minor influence on deglutition mechanisms, due to the mainly gravitational

emptying of the loop, which relies only partially on motility. The pre- or retrosternal surgical montage has a mainly cosmetic impact. The deglutition problems which skin compression and presternal stent angulation at manubrium level could cause, are usually time reversible. We deliberately chose this technique of "compromise" whenever we were in doubt regarding the graft quality: a reasonable compromise, taking into account the vital risks involved. A graft of important diameter, e.g. caecum, implies a tunnel of comparable size, which can present surgical technique difficulties, when used retrosternally. For a graft of limited length, the straighter profile offers excellent deglutition and retrosternal montage is to be preferred as a rule. Time function depends on the implant type, the "Ω" jejunal stent loop being by far the most effective.

59. Developments in Esophageal Surgery for Adenocarcinoma: A comparison of Two Decades

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Background. The objective of this study was to examine outcomes in patients undergoing esophageal resection for adenocarcinoma at our institution during a 20-year period and, in particular, to address temporal trends in long-term survival.

Methods. Out of 470 patients who underwent esophagectomy for malignancy between September 1985 and September 2005, a total number of 175 patients presented with esophageal adenocarcinoma. Patients enrolled in this study included AEG (adenocarcinoma of the esophagogastric junction) type I tumors only. Time trends were studied comparing two decades, 9/1985 to 9/1995 (DI) and 10/1995 to 9/2005 (DII).

Results. The overall survival was significantly more favourable in patients undergoing esophageal resection for adenocarcinoma in the recent time period (DII, 10/1995 to 9/2005) as compared to the early time period (DI, 9/1985 to 9/1995) (log rank test: $p=0.0329$). Significant differences in the recent decade were seen based on lower ASA-classifications, earlier tumor stages, and the operative procedure with a higher frequency of transhiatal resections ($p<0.05$). 30-day mortality improved from 8.3% to 3.1% during the 20-year time-interval, thus without statistical significance.

Conclusion. Based on our experience, overall survival is improving over time for adenocarcinoma of the esophagus. Factors that may play an important role in this trend include early diagnosis and improved patient selection through better preoperative staging, improved surgical technique with a tailored approach carefully evaluated by physiologic patient status, comorbidity and tumor extent.

60. Patients with Locally Advanced Oesophageal Carcinoma Non-responder to Radiochemotherapy: Who Will Benefit from Surgery?

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Background. In patients non responder to primary radiochemotherapy (RCT), prognosis is poor leading mostly to palliation. Salvage surgery may have a survival benefit otherwise R0. Our aim was to identify predictors of R0 resection in these patients.

Methods. In 98 non responders with locally advanced infracardinal tumours, curative salvage surgery was attempted. Resection was R0 in 62.2% and incomplete in 37.8% of cases. Univariate and multivariate analyses included pre- and postRCT variables collected prospectively.

Results. Overall survival was higher in the R0 resection group (18.4 versus 8.6 months, $P < 0.001$). Independent predictors of R0 resection were tumour height ≤ 5 cm on barium swallow ($P = 0.045$) and aortic contact $\leq 90^\circ$ on computed tomography ($P = 0.039$) evaluated after RCT. Three groups of patients were constructed: 1. tumour height ≤ 5 cm with aortic contact $\leq 90^\circ$ ($n = 43$); 2. tumour height between 6 and 10 cm with aortic contact $\leq 90^\circ$ ($n = 32$). And 3. aortic contact $>90^\circ$, irrespective of tumour height ($n = 23$). Rates of R0 resection were 81%, 53% and 39%, respectively ($P = 0.001$).

Conclusion. Salvage oesophagectomy should be systematically attempted in non responders with tumour height ≤ 5 cm on barium swallow and aortic contact $\leq 90^\circ$ on computed tomography.

61. Adenocarcinoma Of The Proximal Esophagus: Report Of 9 Patients

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Background. Adenocarcinoma of the proximal esophagus is a rare clinical entity, with only 28 cases described in the literature. We report our experience of nine patients and a review of the literature on this topic.

Methods. 1,010 patients with esophageal or gastroesophageal junction adenocarcinoma presenting at our department between 1980 and 2004 were retrospectively evaluated.

Results. Nine (0.9%) patients had adenocarcinoma located in the proximal esophagus. Four patients (Group A) were considered unfit for surgery due to severe comorbidities and/or advanced stage disease. Three of them received endoscopic YAG-laser therapy, one patient had feeding gastrostomy. Their median survival

was 6 months [range: 3–9]. The other 5 patients (Group B) were given a first-line cytoreductive treatment: 4 had complete response and 1 patient did not complete chemotherapy due to toxicity and underwent surgery for residual disease. The median survival for these 5 patients receiving neoadjuvant cytoreductive therapy was 36 months (range: 24–132). For the 4 patients with complete clinical response to cytoreductive treatment, the median survival was 54 months (range: 24–132).

Conclusions. First-line chemoradiotherapy is an effective treatment for adenocarcinoma of the proximal esophagus. Salvage surgery may be reserved for patients with incomplete response or recurrent disease.

62. Esophageal Cancer Following Radiation Therapy For Breast Cancer

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Background. Epidemiological studies have demonstrated that adjuvant radiotherapy following surgery for breast cancer increases the risk of esophageal cancer. However, clinical studies are few and in most case anecdotal.

Methods. We retrospectively reviewed the records of 81 patients with esophageal cancer (EC) who have had previous radiotherapy for other type of cancer and have been referred to our center from 1980 to 2006.

Results. The study population was composed by 12 patients [mean age 48 years (range 29–70)] who initially have had breast cancer, 11 of those (92%) underwent a mastectomy. Only one patient had a quadrantectomy. All received adjuvant radiotherapy from 1960 to 1997 (6 before 1980). The subsequent EC was diagnosed at a mean time of 18 years (range 6–33 ys). Histologic evaluation showed squamous cell cancer in 11, adenocarcinoma in one. Clinical TNM stage was: T1N0 in 2, T2N0 in 1 and T3N1 in 9 cases. As treatment for the EC, 6 patients had chemo-radiation therapy, 2 had endoscopic palliation only and 6 underwent surgery. The esophagectomy was performed in 5/6 (83%) patients. Median survival was 12,5 months (range 3–156).

Conclusions. Our report is one of the largest series published in the literature and showed that the vast

majority of patients (75%) presented a locally advanced disease (T3N1M0) at the time of diagnosis. The management of these patients is similar to patients with primary EC but the prognosis seems to be worse because of the delayed diagnosis. Such hypothesis should be confirmed in further studies.

63. COX-2 and VEGF Expression In Esophagogastric Junction Adenocarcinoma—A Molecular Target For Therapy?

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Background. The prognosis for patients with esophageal and esophagogastric adenocarcinoma remains poor, even after surgical resection. Cyclooxygenase 2 (COX-2) and vascular endothelial growth factor (VEGF) are known as useful biological determinants in targeted therapy for other digestive cancers especially the colonic adenocarcinomas.

Aims. In this study we tried to evaluate by immunohistochemical (IHC) method the expression of COX-2 and VEGF in esophagogastric junction (EGJ) adenocarcinoma.

Methods. 30 biopsies from patients with EGJ adenocarcinoma have been evaluated by IHC method (the indirect triserial Avidin-Biotin-Complex method of HSU modified by Bussolati and Gugliotta) for COX-2 (Novocastra, 1:50) and VEGF (Santa Cruz, 1:50) and compared with 2 other study groups: 12 biopsies from patients with esophagitis (control group) and 16 biopsies from patients with Barrett esophagus (metaplasia group).

Results. Expression of both COX-2 and VEGF was significantly up-regulated in patients from metaplasia and cancer groups compared with control group. Also, expression for these two markers was higher in cancer than in metaplasia and significantly higher in dysplastic tissue than in Barrett mucosa without dysplasia.

Conclusion. COX-2 and VEGF may be useful targets for neoadjuvant therapy in esophagogastric junction adenocarcinoma but if they could be considered as biomarkers for progression of dysplasia to cancer remain to be subject for further studies.