Obstructive sleep apnoea

Obstructive sleep apnoea: an underestimated cause of peripheral neuropathy

J de Seze

Patients with cryptogenic polyneuropathies should be screened for OSA

Chronic sensory or sensorimotor polyneuropathy is a common clinical problem referred to neurologists. Even with modern diagnostic approaches, up to one third of them remain unclassified.^{1,2} Recent studies have provided insight into their clinical spectrum and course. The age of onset tends to be in the sixth to seventh decade of life. Symptoms progress slowly, and most patients present with paraesthesias or pain. Cryptogenic polyneuropathies are almost exclusively axonal on clinical, electrophysiological and histological grounds.^{1,2}

In this volume of the *Journal of Neurology, Neurosurgery, and Psychiatry*,

Dziewas *et al*³ (see page 295) report the results of the treatment of obstructive sleep apnoea (OSA) on peripheral nerve function.³ In a previous study, the authors observed an increased prevalence of axonal sensory polyneuropathy in patients with OSA, but this association may be incidental as OSA is a frequent disorder with an estimated prevalence of 2–5% in the general population.^{3,4} The observation of an increased sensory nerve action potential after nasal continuous airway pressure, especially in patients with good compliance, argues for a link between the two pathologies. As pointed out by the authors, the limitation of this study is that thyroid function, vitamin B₁₂

and folic acid have not been systematically studied.

From a clinical point of view, this observation is of particular interest as firstly, it may be possible to reduce the number of cryptogenic polyneuropathies, and secondly, this could lead to a therapeutic approach—that is, nasal continuous airway pressure. Patients with cryptogenic polyneuropathies should be systematically clinically screened for OSA; if positive, they should undergo polysomnography.

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REFERENCES

- 1 Wolfe GI, Barohn RJ. Cryptogenic sensory and sensorimotor polyneuropathies. *Semin Neurol* 1998;**18**:105–11.
- 2 Lindh J, Tondel M, Osterberg A, *et al*. Cryptogenic polyneuropathy: clinical and neurophysiological findings. *J Peripher Nerv Syst* 2005;**10**:31–7.
- 3 Dziewas R, Schilling M, Engel P, *et al*. Treatment of obstructive sleep apnoea: effect on peripheral nerve function. *J Neurol Neurosurg Psychiatry* 2007;**78**:295–7.
- 4 Lüdemann P, Dziewas R, Sörös P, *et al*. Axonal polyneuropathy in obstructive sleep apnoea. *J Neurol Neurosurg Psychiatry* 2001;**70**:685–7.

Intra-arterial thrombolysis

Lowering the bleeding risk in intra-arterial thrombolysis without losing efficiency by excluding adjunctive heparin?

Paul Trouillas

Lowering the bleeding risk in intra-arterial thrombolysis without losing efficiency by excluding adjunctive heparin

Symptomatic intracerebral haemorrhage (sICH) is the main complication of intravenous (IVT) and intra-arterial thrombolysis (IAT). Factors of grave bleedings after thrombolysis have been recently reviewed.¹ Immediate adjunctive heparin is classic in IAT. High doses of heparin may be suspected as a factor of bleeding in IAT on the basis of

the Pro-Urokinase (r-proUK) for Acute Cerebral Thromboembolism (PROACT) I study, in which a higher sICH rate (27.3%) was observed in the high-heparin-dose subgroup, when compared with the low-heparin subgroup (6.7%). Even with the lower heparin regimen, the PROACT II study resulted in a sICH rate of 10.9%²

The article by Brekenfeld *et al* (see page 280) challenges the usefulness of immediate heparin in IAT by its replacement by aspirin (250–500 mg) in 79.6% of the patients. The authors claim a sICH rate of 4.8%, while complete or partial recanalisation (TIMI 2 and 3) was achieved in 70.3% of the patients. They suggest that the lowering of the incidence of sICH might be due to the elimination of heparin.

However, this hypothesis does not find a statistical basis in the study. Only one patient out of 51 experienced sICH in the heparin subgroup (1.9%) compared with nine out of 225 (4%) in the subgroup with aspirin (ns). Thus, this study cannot be considered as statistically valuable to rule out the use of heparin in IAT.

A real comparison of the results of Brekenfeld *et al* with those of PROACT II study needs to select MCA M1 and M2 cases, which characterise PROACT II. Then, the sICH rate is 6% compared with 10.9% in PROACT II. This difference, however, suggests that the PROACT heparin protocol (heparin 2000 U initial bolus followed by 500 U/h for 4 h, starting together with the r-proUK) might be

involved. But many other factors may also have a role: pro-urokinase versus urokinase; the dose of pro-urokinase. The dose of heparin itself might be discussed: it remained high in PROACT II while the activated partial thromboplastin time (aPTT) was not evaluated. Other heparin procedures with continuous infusion for several days and aPTT monitoring aiming 60, may be more relevant. In cardiological IVT, immediate adjunctive heparin therapy with aPTT ranging 45–60 has been shown to be linked to decreased death and sICH rates compared with cases with high aPTT rates.³

The IAT and adjunctive heparin model is also challenged by the model of FAST,⁴ involving a 12 h abciximab (0.125 µg/kg/min) infusion with a low-dose intra-arterial recombinant tissue plasminogen activator (rtPA; median dosage 20 mg), and a possible secondary angioplasty. This procedure resulted in a 6% sICH rate, which

is compared in the article with a 5% sICH rate in a classic rtPA and adjunctive heparin subgroup. However, these bleeding rates observed in the vertebrobasilar system are higher than those in a comparable subgroup of Brekenfeld *et al* (2.4%).

In conclusion, IAT using urokinase with immediate adjunctive aspirin (250–500 mg) yields security and suggests a slight superiority over other IAT either using treatments, pro-urokinase + heparin or abciximab + low doses of rtPA + angioplasty. This superiority could only be definitely established by a randomised multicentric study with three arms.

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REFERENCES

- 1 **Trouillas P**, von Kummer R. Classification and pathogenesis of cerebral hemorrhages after thrombolysis in ischemic stroke. *Stroke* 2006;**37**:556–61.
- 2 **Kase CS**, Furlan AJ, Wechsler LR, *et al*. Cerebral hemorrhage after intra-arterial thrombolysis for ischemic stroke: the PROACT II trial. *Neurology* 2001;**57**:1603–10.
- 3 **Granger CB**, Becker R, Tracy RP, *et al*. Thrombin generation, inhibition and clinical outcomes in patients with acute myocardial infarction treated with thrombolytic therapy and heparin: results from the GUSTO-I Trial. GUSTO-I Hemostasis Substudy Group. Global utilization of streptokinase and TPA for occluded coronary arteries. *J Am Coll Cardiol* 1998;**31**:497–505.
- 4 **Eckert B**, Koch C, Thomalla G, *et al*. Aggressive therapy with intravenous abciximab and intra-arterial rtPA and additional PTA/stenting improves clinical outcome in acute vertebrobasilar occlusion. Combined local fibrinolysis and intravenous abciximab in acute vertebrobasilar stroke treatment (FAST): results of a multicenter study. *Stroke* 2005;**36**:1160–5.