Short reports

Seasonal variation in the necropsy incidence of pulmonary thromboembolism in Hong Kong

K Y Chau, S T Yuen, M P Wong

Abstract

The seasonal variation in the necropsy incidence of significant pulmonary thromboembolism in Hong Kong was investigated. A total of 3446 adult Chinese necropsies carried out in Queen Mary Hospital, Hong Kong, from 1987 to 1992 showed an overall rate of 3.77% for significant pulmonary thromboembolism. The rates for individual months were calculated and compared. The pattern of seasonal variation showed that there are two troughs in early summer (June, July) and early winter (November, December), with rates between 1.6% and 2.4%. The rates in the months for the rest of the year were between 4.0% and 5.5%. The overall pattern was similar to that of the temperate zone although the climate was quite different.

(*J Clin Pathol* 1995;48:578-579)

Keywords: Thromboembolism, Chinese, seasonal variation.

Data on seasonal variation in the necropsy incidence of massive pulmonary embolism in the United Kingdom have been reported.¹ In Hong Kong we have a similar experience of seasonal variation in necropsy incidence of pulmonary thromboembolism. In this report we present data from Hong Kong and compare them with those from the United Kingdom.

Methods

Hong Kong has a subtropical monsoon climate. Summer is hot and wet (July mean temperature 28.8°C; mean maximum temperature 31.5°C; mean relative humidity (RH) 80%). Winter is cool (January mean temperature 15.8°C; mean minimum temperature 13.6°C; mean RH 71%). Spring and autumn have an intermediate temperature but spring is more humid (April mean temperature 22.1°C, mean RH 83%; October mean temperature 25.2°C, mean RH 73%).

The necropsy records of all adult Chinese patients aged 15 years and above who died in Queen Mary Hospital between 1987 and 1992 were examined. Queen Mary Hospital is the regional general acute hospital of Hong Kong

Island. About 97% of the population served by this hospital are Chinese. The hospital offers a full range of medical and surgical services. There was no evidence for any change in the pattern of activities in this hospital at different times of the year. A necropsy was performed whenever the cause of death was uncertain or if it was of clinical interest. Some necropsies were performed for medicolegal reasons.

The rates of necropsy cases having pulmonary thromboembolism as a significant cause of death were calculated for each month in this six year period. Pulmonary thromboembolism as "significant cause of death" was defined as either: (1) Fatal pulmonary thromboembolism—no other immediate cause of death was found at necropsy and at least two lobar arteries were occluded. (2) Contributory pulmonary thromboembolism—in addition to pulmonary emboli, other pathological factors were involved as the possible immediate cause of death; emboli occluded at least one lobar artery or multiple segmental arteries.^{2,3}

Results

The number of necropsies for all adult Chinese in this period was 3446. The yearly necropsy numbers were between 530 and 635. The overall necropsy rate for all ages in the same period was 23.7%.

Significant pulmonary thromboembolism was found in 130 patients, with the annual rates ranging from 2% (1989) to 6.6% (1992). The overall rate of 3.77% was about one third that of the United Kingdom report.¹ The monthly necropsy number, number of patients with significant pulmonary thromboembolism, and the monthly rates are shown in the table.

The monthly rates of massive or significant pulmonary thromboembolism in each study are shown in the figure. Although the criteria for pulmonary embolism are not the same in the two series, we think that their patterns of variation can be compared. For Hong Kong the rates varied from 1.6% in December to 5.5% in March. There were two troughs, one in early summer (June, July) and the other in early winter (November, December). The rates in the other months were similar, between 4.0% and 5.5%.

For statistical calculation, a χ^2 test was used. When each season was compared with the rest

Department of
Pathology, Queen
Mary Hospital,
Hong Kong
K Y Chau
S T Yuen

Department of
Pathology,
University of Hong
Kong,
Hong Kong
M P Wong

Correspondence to:
Dr K Y Chau,
Department of Pathology,
Queen Mary Hospital,
Pokfulam,
Hong Kong.

Accepted for publication
26 September 1994

Monthly incidence of significant pulmonary thromboembolism (PTE) at Queen Mary Hospital, Hong Kong, 1987–1992

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No. of necropsies	310	259	289	277	260	287	338	286	274	267	288	311
No. of cases of significant PTE	14	14	16	11	12	6	7	13	11	14	7	5
Significant PTE (% of total necropsies)	4.5	5.4	5.5	4.0	4.6	2.1	2.1	4.5	4.0	5.2	2.4	1.6

of the year, no significant differences could be found. When the individual seasons were compared, the rate of pulmonary thromboembolism in summer (26/911) was lower than that in spring (39/826), $p < 0.05$. When individual months were compared with the rest of the year, a significant difference was found only for December, where the rate was lower ($p = 0.05$ with Yates's correction). When the rates in two consecutive months were compared with those of the rest of the year, the troughs

in both summer (June and July) and winter (November and December) had significantly lower rates ($p < 0.02$ for each period).

Discussion

The main feature of the pattern of seasonal variation in Hong Kong is the presence of two troughs in early summer and early winter. The main feature of the Birmingham report is the presence of two peaks in spring and autumn. In fact the two graphs show many similarities, and this pattern of variation of pulmonary thromboembolism is similar throughout the subtropical and the temperate regions.¹⁴ The postulations cited in the Birmingham report to explain the effect of weather on pulmonary embolism do not seem to hold for Hong Kong. The temperature in Hong Kong is moderate. There is very little variation and no extremes. Activities are not limited in any way by the weather.¹⁴ The true reasons for this seasonal variation in the incidence of pulmonary thromboembolism in Hong Kong, as for the United Kingdom, remains unknown.

Monthly variation in the rates of necropsies with significant pulmonary thromboembolism (Hong Kong) or massive pulmonary embolism (UK).

- 1 Green J, Edwards C. Seasonal variation in the necropsy incidence of massive pulmonary embolism. *J Clin Pathol* 1994;47:58–60.
- 2 Chau KY, Yuen ST, Ng THK, Ng WF. An autopsy study of pulmonary thromboembolism in Hong Kong Chinese. *Pathology* 1991;23:181–4.
- 3 Bergqvist D, Lindblad B. A 30-year survey of pulmonary embolism verified at autopsy: an analysis of 1274 surgical patients. *Br J Surg* 1985;72:105–8.
- 4 Scharnoff JC, Rosenberg M, Mistica BA. Seasonal variation in fatal thromboembolism and its high incidence in the surgical patient. *Surg Gynecol Obstet* 1963;116:11–4.

J Clin Pathol 1995;48:579–582

Idiopathic granulomatous vasculitis: response to immunosuppressive therapy

Hospital Comarcal
del Noroeste,
Caravaca
de la Cruz,
30400 Murcia,
Spain:
Internal Medicine
G F Alguacil-Garcia
M Martinez-Albadalejo
B Gonzalez-Pina
M de Paco-Moya

Pathology Service
J Moreno-Requena

Gastroenterology Unit
H Hallal-Hachem

Correspondence to:
Dr G F Alguacil-Garcia,
Gran Via 12 6°-B,
Caravaca de la Cruz,
30400 Murcia,
Spain.

Accepted for publication
18 July 1994

G F Alguacil-Garcia, J Moreno-Requena, M Martinez-Albadalejo, H Hallal-Hachem,
B Gonzalez-Pina, M de Paco-Moya

Abstract

A case of idiopathic granulomatous vasculitis (disseminated visceral giant cell arteritis) is described in an old woman, the seventh case of this rare disorder reported to date. The main organ affected was the liver and, to our knowledge, this is the first patient to be diagnosed while still alive and the only case to have received medical treatment. It is also the first time

that muscular involvement has been documented in this condition. Cyclophosphamide treatment resulted in disappearance of symptoms and increase in weight. The patient died of an unrelated condition.

(*J Clin Pathol* 1995;48:579–582)

Keywords: Visceral giant cell arteritis, cyclophosphamide.