Thrombocytosis and ischaemic complications in giant cell arteritis

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BMJ 1991;303:825

Platelet counts may be raised in giant cell arteritis[1,2] but the clinical relevance of this has not been examined. We have investigated the possibility of an association between thrombocytosis and ocular or cerebral ischaemic events in giant cell arteritis.

Patients, methods, and results

We reviewed the medical records of patients with a diagnosis of giant cell arteritis who were admitted to the University Hospital of the Vrije Universiteit Brussel between 1984 and 1989. The diagnosis was based on clinical features, laboratory data (raised erythrocyte sedimentation rate), biopsy findings in temporal arteries, good response to corticosteroid treatment, and subsequent course. The study population consisted of 56 patients (31 women, 25 men) aged 60-89 years (mean 75·6 (SD 6·3)). Platelet count was determined as routine with an automated counter (normal range 150-400×10⁹/l) before corticosteroid treatment.

Patients were assigned to one of two groups based on the presence or absence of transient or permanent visual loss, transient cerebral ischaemic attack, or stroke. Age and sex distributions of the groups were similar (table). Eighteen patients (32%) had a history of ischaemic complications. Transient or permanent visual loss occurred in 13, transient cerebral ischaemic attacks in seven (all in the vertebrobasilar system), and stroke in two (one patient died from a brain stem infarction and the other had an infarction in the territory of the middle cerebral artery).

In the whole study population thrombocytosis (platelet count >400×10⁹/l) was found in 21 patients (37·5%). Linear regression analysis showed no correlation between platelet count and erythrocyte sedimentation rate (r=0·06) or haemoglobin concentration (r=0·15). There was no relation between thrombocytosis and positive biopsy findings in temporal arteries. In 13 patients with thrombocytosis platelet counts were remeasured two to three weeks after corticosteroid treatment had been started; values had returned to normal in all.

The group with ischaemic complications had a significantly higher prevalence of thrombocytosis ($p<0·01$) and a higher median platelet count ($p<0·001$) than the group without ischaemic complications (table).

Findings in 56 patients with giant cell arteritis

	Patients with ocular or cerebral ischaemic events (n=18)	Patients with no ocular or cerebral ischaemic events (n=38)
Median age (years) (SD)	76 (5)	75 (7)
No (%) of women	11 (61)	20 (53)
No (%) with thrombocytosis (platelet count >400×10⁹/l)	11 (61)**	10 (26)
Median platelet count (×10⁹/l) (SD) [range]	475 (125) [309-710]***	338 (96) [163-597]
Median erythrocyte sedimentation rate (mm in first hour) (SD) [range]†	95·6 (31·4) [22-138]	91·3 (22·9) [38-134]
Median haemoglobin concentration (g/l) (SD) [range]	109 (22) [77-149]	114 (18) [77-151]

**p<0·01 (χ^2 test). ***p<0·001 (Mann-Whitney U test). †Westergren.

Comment

Thrombocytosis in giant cell arteritis results from an increased production of platelets.[2] Our results show an association between thrombocytosis and the occurrence of ocular and cerebral ischaemic complications in giant cell arteritis.

Reactive thrombocytosis has been detected in various other inflammatory diseases, such as rheumatoid arthritis, ankylosing spondylitis, and inflammatory bowel disease.[3] The exact underlying mechanism responsible for the increase in platelet production is unknown. A first possible explanation for our findings is that thrombocytosis in giant cell arteritis reflects a more severe degree of vasculitis. We found no correlation between platelet count and erythrocyte sedimentation rate.

A second possibility is that thrombocytosis might contribute to the ischaemic complications in giant cell arteritis. However, there have been no convincing reports that ischaemic manifestations occur as a direct consequence of reactive thrombocytosis in other disorders, at least not with the rather moderate increases in platelet count detected in our patients. The lumen of arteries affected by giant cell arteritis is usually reduced by severe thickening of the intima, and thrombosis is often found at the site of active inflammation.[1,2,4,5] Hence we cannot exclude the possibility that in some patients with giant cell arteritis thrombocytosis may be pathologically significant in narrowed inflamed arteries.

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(Accepted 11 June 1991)

Secretor status and heterosexual transmission of HIV

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BMJ 1991;303:825-6

In contrast to previous studies on bacterial diseases and superficial fungal infections, in which non-secretors of the ABO blood group antigens were significantly overrepresented,[1,2] we found a higher proportion of secretors among patients with some viral illnesses.[3] Previously, we predicted that among patients who acquired HIV through intravenous drug use or anal intercourse the proportions of secretors and non-secretors would reflect that of the local population as these routes of transmission bypass normal mucosal defences.[1,2]

We examined the hypothesis that among subjects exposed to HIV through heterosexual activities a significantly higher proportion of secretors would become infected with the virus.

Subjects, methods, and results

We studied 219 subjects: 151 (99 men and 52 women) who acquired HIV through drug use; 14 homosexual or bisexual men; and 54 (15 men and 39 women) whose only risk factor when they entered the study was heterosexual intercourse with a partner infected with HIV.

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Secretor status was determined from specimens of saliva by an enzyme linked immunosorbent assay (ELISA) for Lewis (Le) blood group antigens.[3] The proportions of secretors and non-secretors among participants in the study were compared with those of 363 women attending antenatal clinics (secretors 72%, non-secretors 28%).[3] The χ^2 test incorporating Yates's correction factor was used to analyse the results. Odds ratios and 95% confidence intervals were calculated by the exact method.

There were 148 (68%) secretors and 71 (32%) non-secretors in the study. This did not differ significantly from the proportions of secretors (72%) and non-secretors (28%) in the local population.[3] The proportions of secretors and non-secretors were not significantly different among the patients with HIV who had acquired the virus by drug use or homosexual or bisexual activities (table).

Among the 54 participants at risk through heterosexual intercourse, 26 were positive for the virus and 28 remained uninfected. The proportions of secretors (70%) and non-secretors (30%) in this group did not differ from those in the other groups of patients with HIV or in the local population. In the 26 participants who had acquired the virus 23 (88%) were secretors and three (12%) were non-secretors, and in the 28 who remained uninfected 15 (54%) were secretors and 13 (45%) were non-secretors ($\chi^2=6{\cdot}29$, $p<0{\cdot}025$).

Comment

These results agreed with the original predictions. The proportions of secretors and non-secretors were not different among subjects who had acquired the virus by intravenous drug use or by anal intercourse, routes which circumvent mucosal defences.[1,2]

In the accompanying paper (p 815)[3] we found a significantly higher proportion of secretors among patients with symptoms of viral disease from whom influenza A and B viruses, rhinoviruses, respiratory syncytial virus, or echoviruses were isolated. If it is assumed that these patients were not immune to the virus at the time of exposure, secretion of ABO blood group antigens seems to be associated with development of disease due to these particular viruses, which enter the host via mucosal surfaces. Among the subjects who seemed to have acquired HIV by heterosexual intercourse the proportion of secretors was higher than among those who acquired the virus by intravenous drug use or homosexual intercourse (88% *v* 67%) ($\chi^2=4{\cdot}068$; $p<0{\cdot}05$). The significantly lower proportion of secretors among the group exposed to the virus who remained uninfected suggests that non-secretors might be less susceptible to acquiring the virus through heterosexual intercourse.

Most work on transmission of HIV has been on factors associated with infected subjects rather than their sexual contact(s).[4] Secretor status is a characteristic easily determined by non-invasive inexpensive procedures. Inheritance and expression of secretor status are independent of sex, age, or environmental factors. Examination of secretor status might be valuable in analysing the apparent variability of other epidemiological factors associated with heterosexual transmission of HIV.

Elucidation of the interactions underlying the apparently increased susceptibility of secretors to acquiring HIV through mucous membranes might lead to new approaches in preventing infection through heterosexual intercourse.

Secretor status and HIV category

Category	Total No	Le^a antigen positive (non-secretor) No (%)	Le^b antigen positive (secretor) No (%)	Odds ratio* (95% confidence interval)
Controls (antenatal clinic)	363	103 (28)	260 (72)	
HIV positive subjects:				
Total	191	58 (30)	133 (70)	0·91 (0·61 to 1·37)
Intravenous drug users	151	52 (34)	99 (66)	0·75 (0·49 to 1·16)
Homosexual or bisexual men	14	3 (21)	11 (79)	1·45 (0·37 to 8·26)
Heterosexual partners of HIV positive subjects:				
HIV positive	26	3 (12)	23 (88)	3·03 (0·89 to 16·10)
HIV negative	28	13 (46)	15 (54)	0·46 (0·20 to 1·09)

*Odds ratio compared with local controls.

This study was supported by grants from the Medical Research Council (SPG9006813) and from The Wellcome Trust (18046/1.5). We thank the medical and nursing staff of the infectious diseases unit for their help; the patients and their partners for their help and patience, without which the study would not have been possible; Dr R A Elton for statistical advice; Miss D A C Mackenzie for technical help; and Mrs M K Cole for preparing the manuscript.

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(Accepted 17 July 1991)

ONE HUNDRED YEARS AGO

A very valuable find of skeletons has been made in Egypt by Mr. Flinders Petrie, who has recently opened a number of tombs previously intact at Medum, belonging to the beginning of the fourth dynasty. This is the earliest known date of Egyptian remains, and that to which the Egyptians ascribe themselves. The skeletons are well preserved, but tender and friable. Some of them bear unmistakable evidence of rheumatic changes, and consequently indicate that at that very remote period man was subject to and suffered from this, as is now shown from its antiquity, venerable disease. No ornaments or objects of art, except occasionally some rough pottery or a wooden headrest, were found with these remains. The greater number were interred in a contracted position with the knees drawn up to the breast, even when the tomb was long enough to allow burial in the extended position, the body placed on the left side, wrapped in linen cloth, the head always to the north and the face to the east. A few, however, apparently the bodies of the highest class or race, were interred in the extended position along with vases of stone or pottery and headrests. At this period there is no trace of mummification. The essential difference in the mode of interment seems to point to difference of race, and it is probable that the contracted burials are those of the prehistoric race of Egypt, while the dynastic race were interred with the body extended. It is extremely interesting to find these contracted burials common at so early a date in Egypt, as a similar mode was adopted by the earliest inhabitants of Great Britain. Mr. Petrie has brought the skeletons to England, and deposited them at the College of Surgeons, where they are being treated so as to strengthen them and render them available for the anatomical investigation which Mr. Petrie intends to have made in order to determine, if possible, their ethnographical affinities. When this is done we shall doubtless also have a full description of any pathological condition which may be present.

(*British Medical Journal* 1891;ii:658)