SHORT REPORTS

Yersinia and chronic glomerulopathy in the savannah region of Nigeria

Glomerular disease secondary to *Yersinia enterocolitica* infection is well recognised in some parts of the world.[1 2] It has been suggested[3] that the glomerulopathy from this infection might progress to chronic glomerulopathy. In this study, which formed part of an investigation into the pattern of glomerular disease in the savannah belt in Nigeria, we investigated the association between *Y enterocolitica* and chronic glomerular disease.

Patients, methods, and results

Twenty-three patients (13 male, 10 female) aged 12-55 years admitted with the nephrotic syndrome (oedema, hypoalbuminaemia, and proteinuria of over 0·5 g/kg body weight/24 h) had their sera tested for agglutinating antibodies against *Y enterocolitica* 0 serotypes 3, 8, and 9. The agglutination was carried out in test tubes by adding the antigen to serial dilutions (from 1/20 to 1/320) of the sera prepared in 1 ml amounts. Antibodies were regarded as being present at titres of 1/40 and over. All seropositive patients were tested for brucella agglutinins and for evidence of recent streptococcal infection. Renal biopsy was done in all 23 cases. Twenty-four patients with chronic non-glomerular disease and 20 normal subjects matched for age, sex, occupation, and area of residence served as controls. All tests for agglutinating titres were done blind.

The table shows the histological type of disease in 20 of the patients and their *Y enterocolitica* antibody titres to the three 0 serotypes. None of the controls had yersinia antibodies, and none of the seropositive patients had antibodies to *Brucella*.

Details of patients and titres of antibodies to Y enterocolitica

Case No	Age (years)	Sex	Type of proliferative glomerulonephritis	Titres								
				Serotype 0:3			Serotype 0:8			Serotype 0:9		
				1/20	1/40	1/80	1/20	1/40	1/80	1/20	1/40	1/80
1	25	M	Diffuse	–	–	–	–	–	–	–	–	–
2	25	M	Diffuse	–	–	–	+	+	+	–	–	–
3	30	F	Diffuse	–	–	–	–	–	–	–	–	–
4	19	M	Diffuse	–	–	–	–	–	–	–	–	–
5	14	F	Membrane	–	–	–	–	–	–	–	–	–
6	25	F	Diffuse	–	–	–	+	+	+	–	–	–
7	27	M	Diffuse	–	–	–	+	+	–	–	–	–
8	12	F	Membrane	–	–	–	+	+	–	–	–	–
9	35	M	Membrane	–	–	–	+	+	+	–	–	–
10	12	F	Membrane	–	–	–	+	–	–	–	–	–
11	25	M	Diffuse	+	+	–	+	+	+	+	+	–
12	13	M	Diffuse	–	–	–	+	–	–	–	–	–
13	21	M	Membrane	–	–	–	–	–	–	–	–	–
14	20	M	Membrane	+	+	–	+	+	–	–	–	–
15	28	F	Diffuse	–	–	–	–	–	–	–	–	–
16	41	F	Diffuse	–	–	–	–	–	–	–	–	–
17	35	N	Renal amyloidosis	–	–	–	+	+	–	–	–	–
18	39	M	Membrane	–	–	–	–	–	–	–	–	–
19	22	M	Diffuse	–	–	–	–	–	–	–	–	–
20	17	F	Membrane	–	–	–	–	–	–	–	–	–

Comment

Ten of the 23 patients studied showed evidence of previous *Y enterocolitica* infection. None of these seropositive patients could give a history indicative of definite past yersiniosis. Symptoms of yersiniosis, however, such as fever, diarrhoea, and abdominal pain, are non-specific and common in the tropics. No patient had ever had a septicaemic illness, arthritis, or erythema nodosum. Possibly they had sub-clinical infections. *Y enterocolitica* may lead to acute glomerulonephritis.[2 4] In a study we did of acute glomerulonephritis in adults only one in 16 patients showed evidence of antecedent streptococcal infection. Possibly some of these cases may have been due to yersiniosis and may progress to chronic nephritis in future.

This is the first time yersiniosis has been reported from the tropics and in relation to chronic glomerulopathy. Immunological investigations will be necessary to obtain more direct evidence of a connection between glomerulopathy and yersiniosis. Infection with 0 serotype 8 has previously been reported only in the USA. It appears from our study that 0 serotype 8 causes most infection and is possibly nephrotoxic; in Scandinavia 0 serotype 3 predominates.

We thank Dr N Mair of the Public Health Laboratory, Leicester, England, for supplying the yersinia antigens.

[1] Leino R, Kalliomaki JK. Yersiniosis as an internal disease. *Ann Intern Med* 1974;**81**:458-61.
[2] Friedberg M, Denneberg T, Larsen S. Yersinia enterocolitica and glomerulonephritis. *Lancet* 1978;i:498-9.
[3] Friedberg M, Denneberg T, Brun C, Larsen JH, Larsen S. Glomerulonephritis in infections with Yersinia enterocolitica 0-serotype 3. II. The evidence and immunological features of yersinia in a consecutive glomerulonephritis population. *Acta Med Scand* 1981;**209**:103-10.
[4] Denneberg T, Friedberg M, Samuelson T, Winblad S. Glomerulonephritis in infections with yersinia enterocolitica 0-serotype 3. I. Evidence for glomerular involvement in acute cases of yersiniosis. *Acta Med Scand* 1981;**209**:97-101.

(*Accepted 24 August 1982*)

Department of Medicine, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria
C AWUNOR-RENNER, MRCP, consultant physcian (present address: Medical Unit, Southland Hospital, Kew, Invercargill, New Zealand)

Department of Medical Microbiology, Ahmadu Bello University, Zaria, Nigeria
R V LAWANDE, MD, senior lecturer

Popular marathons: forecasting casualties

More than 100 open-entry long-distance running events are planned in Britain this year.[1] We report on the nature and volume of casualties that occurred in the 1982 Sheffield marathon: these data may help in planning supporting medical services for such events.

Methods and results

Medical students recorded clinical details of all contacts made by runners with any of the 12 first-aid posts along the 26·2 mile (42 km) route of the 1982 Sheffield marathon, which had an option of running only half the distance (half marathon).

A total of 4559 (4277 men, 282 women) submitted entry forms, giving their age, sex, previous marathon experience, and the distance they intended to cover (half or full marathon). Of these, only 3462 (76%) subsequently registered for the start of the race. The "no show" proportions were not related to sex, previous experience, or distance intended, but significantly more over-40s (82%) registered than younger entrants (75%) ($p < 0{\cdot}05$).

Of those who registered, 2602 specified their intention of running the full marathon, but 494 (19%) of these finished at the halfway stage. A total of 825 entrants intended to complete only half the distance, but 181 (22%) went on to complete the full marathon. Completing a distance different from that originally intended was related to previous experience: experienced runners ran further than intended less often than inexperienced runners did, and more often ran a shorter distance. Data on the intention of the remaining 35 runners were unavailable.

Of the 2289 who ran the full marathon (all those who ran beyond the halfway stage) 409 (18%) made 580 contacts with first-aid stations, presenting 672 first-aid problems. Of 1140 who ran a half marathon (all those who finished at this point or who did not reach it), 41 (4%) made only 46 contacts, presenting 49 first-aid problems: these are not considered further. Of those completing the full marathon who made contact there was a significantly higher proportion of women (32%) than men (17%), and significantly fewer over 40 (13%) than under (18%). Those with any previous experience of running had a significantly lower contacting ratio (14%) than those without (19%), and this was true for each age group.

More than half the problems related to muscles or joints (see table). Skin conditions, especially blisters, were the next most common problems. Extreme exhaustion, accompanied in a few cases by mental disturbances, was not uncommon. Runners who had completed full marathons before presented relatively fewer localised problems and more constitutional problems. Most contacts were with the later stations. Only at the finish was there a sizeable proportion of constitutional disorders warranting more intensive treatment. Twenty-six runners (1%), all intending to run the full marathon, were taken to hospital, suffering from manifestations of heat illness (24) or leg injuries (two). Four were detained, but they were discharged the next day.