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SHORT REPORTS

Do some marathon runners bleed into the gut?

Bleeding into the bladder wall and exercise related haematuria are recognised complications of marathon running.¹ Bleeding may also occur into the bowel² and perhaps caecal wall.³ I report a study of runners in a provincial marathon race.

Patients, methods, and results

I posted questionnaires to the 600 runners who registered for the 1983 Guildford marathon. The questionnaires established the age, sex, number of previous marathons, weekly training mileage, and the presence of gastrointestinal symptoms and blood in vomit, urine, and stools. Of the 600 runners 415 showed their intention to run the full marathon by entering the second circuit of the course, and 386 completed the race. Of the 415 (287 men and 12 women) 299 (72%) returned their questionnaires. In a preliminary study three runners who had taken part in a different marathon and were not entered for the Guildford marathon submitted to a hospital laboratory stool specimen taken before and after the marathon race. One of these three runners (a slow veteran) gave positive results for melaena after the race, though not before. He later ran in another marathon and again these results became positive.

In this study 10% of the original applicants were randomly selected and asked to test their urine for the presence of blood immediately after the race with a reagent strip (Labstix) and to provide stool smears taken before and after the race to test for the presence of occult blood (Hema-Chek). Samples were returned by 36 runners (about 54% of those eligible). None of them reported frank haematuria, but two had reagent strips giving positive results. These, however, do not discriminate between red blood cells, haemoglobin from march haemoglobinuria, or myoglobin, which may be produced in quantity during vigorous exercise.⁴ Only one runner (a young slow man) reported tarry stools. Two men (one young and fast, and one a slow veteran) with negative test results for melaena before the race gave definitely positive results after it. A further man (young and fast) had a weakly positive smear after the race. None of the smears was positive before the race. One runner gave positive results with both the urine reagent strip and stool smear. None of the runners with a positive stool smear result admitted to piles.

Comment

Only one of the 299 runners studied noted a tarry stool, but three (8%) of 39 (including those in the preliminary study) passed stools after racing which gave positive results for melaena. This suggests that unrecognised bleeding into the gut during a marathon is not uncommon. Contributory factors may include an unsuspected local cause such as piles, damage to intraabdominal hollow organs from repetitive impact of a free surface against a fixed surface such as has been described for the bladder,¹ relative ischaemia of the gut wall caused by diversion of the splanchnic circulation,² and trauma

haemolysis in the feet which might trigger disseminated intravascular coagulation with some consumption of coagulation factors and cause a predisposition to bleeding. The aetiology of the mild anaemia found in some distance runners is obscure,⁵ but repeated oozing into the gut during training and racing may be a factor.

I thank the Guildford Lions and the marathon runners for their help and cooperation, Ames Ltd for diagnostic aids, and Dr J Shirley for advice. The study was financed by a grant from the research foundation of the Royal College of General Practitioners.

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Skin test wheal size and erythema not reduced by topical antihistamine

Prior treatment with systemic antihistamine preparations suppresses pruritus induced by histamine¹ and allergens² and diminishes wheal size.³ It is common practice to apply a topical antihistamine preparation for symptomatic relief after skin testing with allergens, although the benefits of this have not been tested. We report a double blind controlled trial of mepyramine maleate cream versus placebo cream applied after skin testing in patients with atopy.

Patients, methods, and results

Skin prick tests were performed on both arms of 32 patients with atopy using the following Bencard allergens: house dust mite, grass and tree pollen, cat and dog fur, feathers, and aspergillus; positive (histamine) and negative controls were also used. After 10 minutes we recorded the diameter in millimetres of the largest wheal and the intensity of erythema on a visual analogue scale ranging from "no erythema" to "intense erythema" on a 100

mm line. The degree of pruritus was recorded by the patient on a visual analogue scale ranging from "no itching" to "intense itching" on a 100 mm line.

Patients were included in the trial only if at least one wheal other than that induced by histamine was larger than 4 mm in diameter. Coded creams of identical appearance, one containing 2% mepyramine maleate and a control cream consisting of the same base without the active drug, were applied in a randomised double blind fashion, one to the right arm and the other to the left. Wheal size, erythema, and itching were reassessed 10 minutes afterwards.

Analysis of covariance was performed on the difference between the initial values and those found on reassessment.

The table shows that there was no significant difference between the initial values for erythema, wheal size, and pruritus on the two arms or between the effects of active and placebo creams in suppressing pruritus and reducing erythema and wheal size.

Differences in reactions to skin prick tests before and after application of active and placebo creams

Reaction	Type of cream	Before cream	After cream	Difference	p
Pruritus*	Active	45	30	-15	0.92
	Placebo	43	31	-12	
Wheal size (mm)	Active	8	9	+1	0.20
	Placebo	8	9	+1	
Erythema*	Active	35	38	+3	0.80
	Placebo	34	37	+3	

* Assessed on visual analogue scale of 0-100.

Comment

Topical mepyramine cream is no better than placebo cream in reducing wheal size, erythema, and pruritus when used after allergen skin testing. This is not unexpected as antihistamine drugs are competitive antagonists and would not have an effect when mediators have already been released into the tissues and are bound to receptors. Both active and placebo creams, however, reduced pruritus despite an increase in erythema and wheal size. After the results of skin tests have been recorded a simple soothing cream may therefore be applied to provide symptomatic relief.

We thank May and Baker for supplying the active and placebo creams and for help with statistical evaluation.

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An unusual cluster of babies with Down's syndrome born to former pupils of an Irish boarding school

Clustering in time and space of cases of Down's syndrome has attracted attention. Collmann and Stoller suggested an infective cause.¹ We report an unusual cluster of babies with Down's syndrome born to six young mothers whose only common feature was that they attended school together in Dundalk, an eastern coastal town in the Republic of Ireland, during the 1950s. An outbreak of illness similar to influenza occurred in the school in October 1957.

Patients, methods, and results

A child with Down's syndrome was examined by one of us in 1974, and the mother mentioned that babies with Down's syndrome had also been born to some of her school friends. All 213 pupils who had attended the school in the 1950s were contacted, and details of their obstetric and other personal histories were sought. This revealed that six babies with Down's syndrome had been born to six former pupils (table). Because of the influenza epidemic in 1957 sera from the six mothers of babies with Down's syndrome and from 128 controls, who included 55 other former pupils of the "affected" school, were tested for influenza and other possible teratogenic agents.

Six school companions who had babies with Down's syndrome

Mothers		Babies	
Date of birth	Dates at school	Normal	Down's syndrome (year of birth)
10 Nov 1943	1956-62	6	F (1970)
25 Feb 1944	1954-9	2	F (1963)
4 Sept 1938	1955-7	2	M (1964)
7 July 1939	1952-7	3	F (1966)
11 June 1941	1955-9	6	M (1972)
13 April 1946	1951-60	2	F (1972)

The sera from all 134 mothers were examined for antibody titres to several influenza strains and also to rubella, cytomegalovirus, hepatitis B, and to the protozoan *Toxoplasma gondii*. None of the results was significant. Karyotyping of the six babies with Down's syndrome showed that all were simple trisomy 21. In each case both the parents had normal chromosomes. All have since had only normal children in a total of 26 pregnancies (table). Fetal wastage was compared in all groups but results showed no statistical significance.

In the control group one baby with Down's syndrome was born as a result of a fifth pregnancy to a 40 year old mother from another school. Two controls had also spent their teens in Dundalk though not at the same school. None of the 134 used contraceptives, fertility pills, or drugs. None of the six mothers of babies with Down's syndrome smoked. Only one had been exposed to x rays during pregnancy and she had had a single dental x ray examination.

Comment

The number of affected children was far too high to be the result of chance alone. The incidence of six babies with Down's syndrome in a total of 26 pregnancies (table) is significantly higher than the accepted overall incidence of one in 600.

Trisomic clustering in space and time has been reported many times.² This unique cluster is related to neither space nor time; the babies were born in different locations. The only common factor is that their mothers lived in close association during their teenage years and had an illness similar to influenza in October 1957.

Another possible time related causative factor was the nuclear accident at Windscale 10 October 1957. Irish meteorological reports are consistent with radioactive fallout having reached Ireland at a time of heavy rainfall in the Dundalk area. Radioactive iodine (¹³¹I) and Polonium 210 are transmitted via cows' milk and the food chain.³ Milk supplies were not monitored for radioactivity in Ireland at that time so no figures are available. We suggest that the levels of exposure to radiation in Dundalk were probably similar to those of the average population in southern England. Estimates of dosage are well below those that would be expected to give rise to demonstrable consequences unless perhaps some other unknown interacting factor, such as a virus infection, had been present.

An increased incidence of Down's syndrome along the east coast of Ireland with a peak in 1974 has been reported.⁴ There has also been an increase in the number of deaths from leukaemia and cancer along the east coast.

What happened to these young women when they were teenagers in school together? We are left with the nagging doubt that possible exposure to radiation associated with some infection had an adverse influence on the subsequent non-disjunction of chromosome 21 in their six babies.

We thank the staff of the Meteorological Office and Dr Eric Feeney, principal physicist, St Luke's Hospital, Dublin, for their help, and Mrs S Duffy for typing the manuscript.

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