Investigation of QT interval in adult coeliac disease

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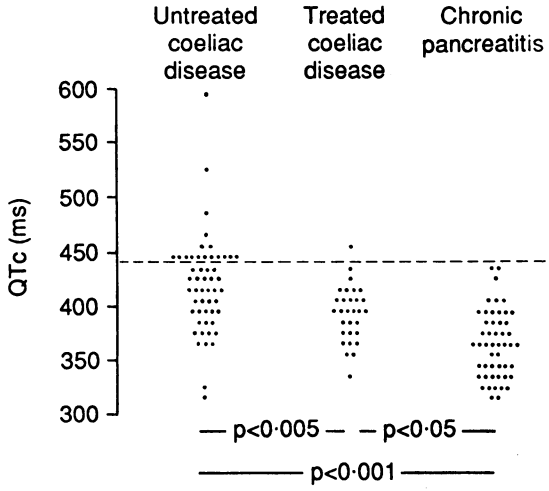
Delayed heart repolarisation is marked by prolonged QT interval on electrocardiography and may be complicated by ventricular arrhythmias, syncope, and sudden death.[1] Such events have recently been associated with severe malnutrition, as occurs in anorexia nervosa[2] and after ileojejunal bypass.[3] These reports have prompted us to measure QT interval in adult patients with coeliac disease, a condition which often presents with nutritional impairment.

Patients, methods, and results

Eighty three patients (59 women, 24 men; mean age 44·3 (range 17-76) years) with biopsy evidence of coeliac disease took part in the study. Fifty three of them were untreated and 30 had been taking a gluten free diet for at least six months at the time of the study. Fifty patients with untreated chronic pancreatitis (19 women, 31 men; mean age 45·6 (16-73) years) were studied as controls. No patient had a history of ischaemic heart disease or of taking drugs known to induce QT prolongation.

All electrocardiograms were reviewed blindly by the same observer and the QT interval corrected for heart rate (QTc) was calculated according to Bazett's formula[1] and compared with the generally accepted upper normal limit for QTc of 440 ms. Serum potassium and calcium concentrations were measured by standard laboratory methods. Nutritional state was assessed by calculating the percentage of ideal body weight for sex and height. Results were analysed by Mann-Whitney U test and Spearman's rank correlation test.



Comparison of QT interval in untreated and treated patients with coeliac disease and control patients with chronic pancreatitis. Broken line indicates upper limit of normal range

The QTc interval was significantly more prolonged in untreated coeliac patients (mean 423 (SD 45) ms, 95% confidence interval 411 to 435 ms) than in patients on a gluten free diet (mean 390 (25) ms, 95% confidence interval 385 to 395 ms) and patients with chronic pancreatitis (mean 370 (30) ms, 95% confidence interval 361 to 379 ms) (figure). A QTc interval longer than 440 ms was found in 17 of 53 (32%) untreated patients but only one of 30 (3%) treated patients and none of 50 patients with chronic pancreatitis. In the group of untreated coeliac patients a significant inverse correlation ($r_s = -0{\cdot}48$, $p<0{\cdot}005$) was found between serum potassium concentration and QTc interval. No correlation was found between QTc interval and either serum calcium concentration ($r_s = -0{\cdot}21$) or percentage of ideal body weight ($r_s = -0{\cdot}10$).

Comment

The long QT syndrome is rare but nevertheless is associated with an increased risk of death.[1] We found that one third of adult coeliac patients had prolongation of the QT interval compared with none of the control patients with chronic pancreatitis. Although in most untreated coeliac patients the abnormality is mild, it should not be overlooked since the risk of ventricular tachyarrhythmias does not strictly depend on QT length[4]: in two out of three patients with anorexia nervosa in whom sudden death was reported only marginal degrees of QT prolongation were present.[2] It is thus advisable to evaluate and monitor the QTc interval carefully in patients with untreated coeliac disease, a condition in which the possibility of sudden death is recognised.[5] The inverse correlation that we have found between QT length and potassium serum concentrations indicates that in coeliac patients with QT prolongation electrolyte replacement should be promptly added to gluten free diet.

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Onchocerciasis in members of an expedition to Cameroon: role of advice before travel and long term follow up

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Travellers chosing "adventure" holidays abroad in rural regions of tropical countries risk infection with diseases rarely encountered in tourist resorts. Many tropical conditions may present with non-specific symptoms, some becoming manifest many years after exposure. Onchocerciasis (river blindness) is one such infection, with an incubation period of one to four years.[1] In heavy infections the microfilarias produced by the longlived filaria nematode may produce dermatitis and eye lesions, which often lead to blindness and severe pruritus. Infection is transmitted by the day biting simulium fly near its breeding site in fast flowing rocky rivers. The disease has a patchy distribution throughout many tropical countries in Africa and Latin America.

In expatriate travellers onchocerciasis rarely leads to irreversible skin or eye damage, but it can cause unpleasant symptoms. The presenting features of light infections are commonly rash and pruritis. Treatment with the microfilaricidal drug ivermectin kills microfilarias in the skin and alleviates symptoms for six to 12

Clinical features and symptoms in 85 travellers exposed to onchocerciasis in Cameroon. Figures are numbers (percentages) of travellers

	Positive for onchocerciasis (n=22)		Negative for onchocerciasis (n=63)	
	Positive	Negative	Positive	Negative
Clinical features				
Eosinophils ≥10% of total leukocyte count	19 (86)	3 (14)	1 (2)	62 (98)
Serological test for filaria	12 (55)	10 (45)	3 (5)	60 (95)
Skin snip test	10 (45)	12 (55)		2 (100*)
Mazzotti test	12 (100*)			2 (100*)
Symptoms				
Rash	15 (68)	7 (32)	8 (13)	55 (87)
Swellings	9 (41)	13 (59)	13 (21)	50 (79)
Pruritus	17 (77)	5 (23)	13 (21)	50 (79)
Itchy eyes	5 (23)	17 (77)	11 (17)	52 (83)

*Percentage of subjects actually receiving test.

months. Treatment may need to be repeated for many years until the natural death of the adult worm.

We report a cluster of cases of onchocerciasis in July 1990 from a single expedition to west Africa.

Subjects, methods, and results

In December 1988, 143 young people (113 from the United Kingdom; mean age 26) visited a region of endemic onchocerciasis in Cameroon. The mean duration of the expedition was three months (range 27 days to 15 months). To identify those infected a self administered questionnaire was posted to expedition members with a request that their general practitioners take a blood sample for serological testing for filaria and eosinophil count. Subjects with positive serological results or a raised eosinophil count who reported symptoms were admitted for detailed inpatient investigations. Onchocerciasis was defined as the presence of positive skin snip test results or development of a typical rash after a dose of diethylcarbamazine (Mazzotti reaction).[2] Subjects with negative serological results and an eosinophil count <10% of the total leucocyte count or with both negative skin-snip and Mazzotti test results were termed negative for onchocerciasis.

Onchocerciasis was diagnosed in 22 (26%) of the 85 respondents; eosinophilia ≥10% and positive serological results for filaria were present in 19 (86%) and 12 (55%) respectively. Twenty (91%) positive respondents had symptoms compared with 31 (49%) negative respondents. Pruritus and rash were the most frequently reported symptoms in the positive group (table). A "snowflake" keratitis[3] was seen in one subject. All subjects positive for onchocerciasis were treated with ivermectin 150-200 μg/kg and are being followed up; negative subjects are being recontacted to detect late onset disease.

Comment

The initial case of onchocerciasis was diagnosed in a subject 15 months after exposure, illustrating the clinical importance of patients' travel history. This outbreak highlights the ignorance of risk of exposure and problems of reaching a definitive diagnosis. Contacting subjects for screening was made particularly difficult by the long period between exposure and presentation of disease and the geographical mobility of the study population. Despite our intensive follow up procedure the response rate was only 59%. With attack rates of 26% in the responders a proportion of the 58 non-responders may have been infected and remain untreated. Current diagnostic methods are not always disease specific, and a low microfilarial load in early cases resulted in low parasitological and serological sensitivity. Risks of acquiring tropical diseases may vary in different regions. Some, such as onchocerciasis, may be acquired during a relatively short visit to a highly endemic focus during the transmission season. Those who plan expeditions to the tropics need to seek expert advice on all regional and seasonal health risks in the areas to be visited. Subsequent screening may be appropriate, and the finding of eosinophilia with chronic non-specific symptoms a year or more after travel requires specialist investigation.

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ONE HUNDRED YEARS AGO

BARBARIC MIDWIFERY.

Dr. J. K. Simpson, of Alaska, gives in a recent number of the *Occidental Medical Times* a sketch of the obstetric customs of the Alaskan Indians. His observations were made in the south-east of Alaska. When a woman arrives at full term a tent or hut is erected, and a hole dug in the middle and lined with moss. When labour commences the woman goes to the hut and squats over the hole, as in the act of defæcation, grasping a pole driven into the ground in front. She is attended by three squaws; one sits behind her, and when a pain comes on clasps her arms firmly about the abdomen, while the other two women press firmly with their shoulders against the knees of the parturient woman. The child drops into the hole, occasionally breaking a bone or sustaining other injury. The umblical cord is divided about 4 inches from the navel by twisting it and pinching with the nails, and is not tied. The squaws maintain their relative positions during the third stage of labour; a binder, consisting of two pieces of cloth or skin quilted together, and strengthened by pieces of bark, is applied, and the woman if a primipara, remains where she is for ten days, but if a multipara often goes about her work the first of second day; in neither case is she washed for ten days, so that antiseptic midwifery is not followed. In spite of this, puerperal fever appears to be uncommon. The child, after remaining in the hole five or ten minutes, is drawn out, and the midwife dresses the stump of the cord with a foul-smelling mass consisting of the leaves of some herb chewed months before. The child's face is wiped, and it is put unwashed into a bag, stiffened with bark, which covers all but the head. Certain superstitions exist as to the placenta and cord. As a rule the placenta is burnt and the ashes carefully preserved; when the individual dies the ashes of the placenta are placed with those resulting from the cremation of his body in a small burial house. When the stump of the cord becomes detached from the infant's navel it is enclosed in an embroidered buckskin cover, and stitched to the front of the child's clothing, where it remains like a rosette until he is 3 or 4 years old. At that age the child goes into the woods and hides it.

(*BMJ* 1892;i:927)