Investigation of QT interval in adult coeliac disease

G R Corazza, M Frisoni, C Filipponi, L Gullo, V M Poggi, G Gasbarrini

University Department of Medicine, 67100 L'Aquila, Italy
G R Corazza, *associate professor*

First Department of Medical Pathology and Clinical Medicine, S Orsola University Hospital, 40138 Bologna, Italy
M Frisoni, *registrar*
C Filipponi, *research fellow*
L Gullo, *senior registrar*
V M Poggi, *lecturer*
G Gasbarrini, *professor*

Correspondence and requests for reprints to: Professor Corazza.

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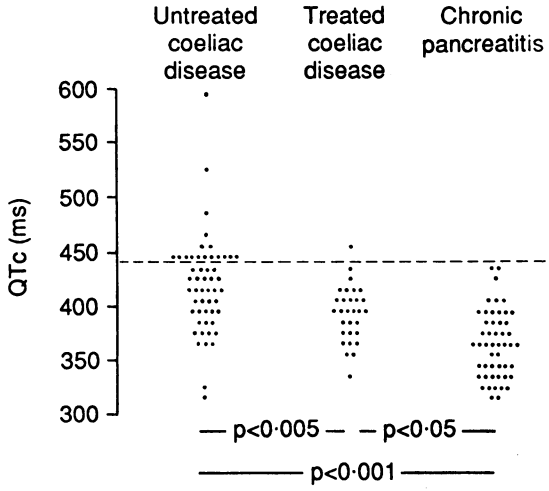
Delayed heart repolarisation is marked by prolonged QT interval on electrocardiography and may be complicated by ventricular arrhythmias, syncope, and sudden death.[1] Such events have recently been associated with severe malnutrition, as occurs in anorexia nervosa[2] and after ileojejunal bypass.[3] 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

Dorothy Pryce, Ronald Behrens, Robert Davidson, Peter Chiodini, Anthony Bryceson, Johanna McLeod

Correspondence to:
Ms D Pryce, Hospital for Tropical Diseases, First Floor, Queens House, London W1P 9LE.

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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