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Diagnosis of vascular dementia

I read Dr Stewart's article on vascular dementia (Stewart, 2002) with great interest. As a recently appointed consultant in old age psychiatry (having been trained in the 'old' way about diagnosing vascular dementia, i.e. sudden onset, stepwise deterioration, history of vascular risk factors, etc.), I started noticing a very different presentation of vascular dementia, especially in those with evidence of extensive periventricular disease on computed tomography. These cases commonly present with a range of frontal executive function deficits, with functional psychiatric symptoms of anxiety and depression and sometimes with progressive aphasia, and do not necessarily have the classical history of vascular dementia as described in textbooks.

The importance of the clinical findings is that as clinicians and educational supervisors we need to use more screening tests for frontal executive functions in routine assessments of dementia. In addition to the Mini-Mental State Examination (Folstein *et al*, 1975), verbal fluency and similarities (FAS; Thomas & O'Brien, 2002) tests are quick ways of testing frontal functions and should be encouraged among all members of a multi-disciplinary team. This has also been recognised in the new Cambridge Examination for Mental Disorder of the Elderly, Revised (CAMDEX–R; Roth *et al*, 1999).

Findings of periventricular ischaemia are controversial as far as their relevance to dementia diagnosis is concerned but patients who present with marked frontal functioning deficit and evidence of periventricular ischaemia on computed tomography should receive a diagnosis of vascular dementia. It is now known that ischaemia in periventricular areas interferes with the cortico–striato–thalamo–cortical loops which, in turn, affect functioning of frontal lobes.

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Prolonged QT interval with rivastigmine

Rivastigmine is an acetylcholinesterase inhibitor licensed in the UK since 1998 for the treatment of mild to moderate Alzheimer's disease. Prolonged QT interval in association with this drug has not been previously described in the literature.

A 78-year-old man with dementia was commenced on rivastigmine for worsening of his cognitive decline and behavioural difficulties. He was receiving the following long-term medication: diltiazem, citalopram, furosemide, aspirin and ranitidine. His urea and electrolytes showed a low-normal potassium of 3.4 mmol/l (normal 3.5–5 mmol/l). A pre-treatment electrocardiogram (ECG) showed evidence of an old inferior myocardial infarct, a QT interval of 382 ms and a QTc interval of 397 ms.

Seven days after commencement of rivastigmine a repeat ECG showed a QT interval of 476 ms and a QTc interval of 477 ms. Rivastigmine was the only recent additional medication and was therefore discontinued. No other changes were made. One week later the ECG showed a normal QT interval of 402 ms and a QTc interval of 399 ms. (An abnormal QTc interval is defined as >456 ms.) A repeat ECG 2 months later on his long-standing medication showed normal QT and QTc intervals.

Prolonged cardiac repolarisation (QT interval) is important as it may lead to potentially life-threatening ventricular arrhythmias (e.g. torsades de pointes; Thomas, 1994). Risk factors for prolonged QT intervals include: congenital long QT interval syndrome, clinically significant bradycardia or heart disease, electrolyte imbalance (hypokalaemia, hypomagnesaemia), impaired hepatic or renal function and concomitant treatment with drugs with potential for pharmacokinetic/pharmacodynamic interactions (De Ponti *et al*, 2000).

To date, rivastigmine has been associated in very rare cases with atrioventricular block (see Exelon product data sheet; Novartis Pharmaceuticals UK Ltd, 2001). A literature search failed to identify any reports of QT interval prolongation associated with rivastigmine.

Confounding factors, such as comedication, electrolyte abnormalities and underlying disease, are more likely to occur in older people, who are the most likely age group to be receiving these drugs. Case reports such as this are an important method of reporting potential side-effects, particularly in the context of a newly introduced therapy.

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From mental hospitals to community care

The statistics on mental hospital closures given by Professor Leff (2001) will surprise not only lay people. I had no idea that hardly any mental hospital beds remain.

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