Letters to the Editor

Hallucinations as an adverse effect of angiotensin converting enzyme inhibition

Sir,

We describe two cases of disturbed visual perception during treatment of heart failure with captopril and enalapril.

Case 1

A 73 year old man was commenced on enalapril 5 mg twice a day when he developed pulmonary oedema 2 months after an anterior myocardial infarction. His only other medications were frusemide 80 mg and aspirin 300 mg daily. He presented a week later with recurrent pulmonary oedema, 2 days after stopping enalapril because it made him feel ‘unwell’. Reinstigation of this therapy resulted in visual hallucinations (the ward beds had vanished and the staff all appeared pregnant). Though his urea and creatinine were moderately raised (12.1 mmol/l and 194 μmol/l, respectively), these, and his other biochemical values, were unchanged from pretreatment values. Blood glucose was normal. No hypotension occurred, he had no preceding psychiatric disorder and did not drink alcohol regularly. His symptoms resolved on withdrawal of enalapril. However, captopril was commenced a month later at a dose of 12.5 mg three times daily when he had further pulmonary oedema. Within 24 hours his hallucinations returned (insects running up the curtains, he felt as though he was falling into a black hole), but again resolved 24 hours after stopping captopril. No electrolyte abnormality was detected and again his blood pressure was stable.

Case 2

A 64 year old man was commenced on captopril 12.5 mg three times a day for congestive cardiac failure 3 weeks after a myocardial infarction. His only other medication was frusemide 40 mg. Within one month of starting this treatment he developed disturbed visual perceptions on rousing from sleep as well as nightmares. These were always worse within 2 hours of taking captopril. His electrolytes were not altered by captopril therapy and all, except urea and creatinine (urea 10.6 mmol/l, creatinine 130 μmol/l) were within normal range. Blood glucose was normal. His alcohol intake had been high in the past, but he had stopped drinking some weeks before admission to hospital.

These two cases illustrate how angiotensin converting enzyme (ACE) inhibitor therapy can cause visual hallucinations and nightmares. In the first case, a clear relationship to ACE inhibitor treatment was established and the hallucinations could not be explained by disordered biochemistry, hypotension or concomitant drug administration. In the second case withdrawal of captopril has not been attempted as his heart failure has greatly improved, but his hypnagogic experiences and nightmares are temporally related to treatment.

Until August 1991 the Committee on Safety of Medicines (CSM) received five reports (out of 2,716 yellow cards) of hallucinations for captopril and nine (out of 2,885 yellow cards) for enalapril (CSM, personal communication). The West Midlands Adverse Drug Reaction Centre recently received a report of a 77 year old taking 2.5 mg enalapril who experienced visual hallucinations which resolved after stopping the drug (West Midlands Centre for Adverse Drug Reactions Reporting (WMCA DRR), personal communication).

Reports are also scarce in the literature. One paper described confusion and hallucinations in a 76 year old man given captopril 37.5 mg daily for severe heart failure. Reduction in dosage did not help but intravenous naloxone completely restored mental functioning. It was suggested that captopril inhibited enkephalin dipeptidyl carboxypeptidase (EDCP) thus enhancing opioid activity. The Swedish Adverse Reactions Committee has also published the case of a 49 year old woman who developed confusion, headache and hallucinations within one week of starting captopril therapy. She was well 12 days after stopping treatment. One report of unpleasant dreams with enalapril has also been recorded.

Elderly people with cardiac failure often present with atypical symptoms such as somnolence, confusion, disorientation and falls because their central nervous and musculoskeletal systems are more sensitive to a fall in cardiac output. Such symptoms developing during therapy might not be readily attributed to medications. We thus encourage greater vigilance in recognizing this adverse effect of ACE inhibitors. It may not be readily volunteered, could impair compliance with treatment and may cause considerable distress.

C.A. Haffner
B.S. Smith
C. Pepper

Department of Health Care for the Elderly,
Hayward Building,
Selly Oak Hospital,
Raddlebarn Road,
Selly Oak,
West Midlands,
and Division of Medicine
Sandwell District General Hospital,
Lyndon,
West Bromwich,
West Midlands, UK.

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Quotes from 1988 newsletter of WMCADRR.
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C. A. Haffner, B. S. Smith and C. Pepper

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