Community Clinics in Clinical Pharmacology

Widespread atheromatous arterial disease

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Case history

Mr GH, a 52-year-old patient with hypertension, first presented aged 42, with weakness of his right arm and leg which had developed suddenly. Examination showed signs of a right hemiparesis and a blood pressure of 230/125 mm Hg, and anti-hypertensive treatment with methyldopa was started. Apart from a syncopal attack three years ago (which was ascribed to postural hypotension) he has been otherwise well and made a complete recovery from his "stroke." For the past three months, however, he has complained of classical symptoms of intermittent claudication of his right leg, which now limits his exercise capacity to 100 yards. In addition, he has noticed tingling of his right hand and palm lasting five to 10 minutes at a time and recurring almost every day; moreover, he has also had short periods (four to five minutes) of involuntary movement of his right wrist occurring independently of his sensory symptoms. He is currently receiving methyldopa 250 mg twice daily, and hydrochlorothiazide, 50 mg every morning. His sitting blood pressure last week was 150/100 mm Hg.

I asked Professor Rawlins to see him, firstly, to find out about these neurological symptoms, and secondly, to find out whether we should be doing anything else for him.

Advice

I saw Mr GH this morning. There is little to add to Dr Smith's history. He has smoked 10 cigarettes daily for 30 years. His sensory and motor symptoms in his right arm have diminished substantially in frequency, intensity, and duration over the past 10 days and he has no headaches, visual disturbances, or recent failure of concentration.

His blood pressure was 150/100 mm Hg (lying) and 135/95 mm Hg (standing), but there were no signs of left ventricular failure. Dorsalis pedis and posterior tibial pulses in both legs were absent as was the right popliteal pulse. His other peripheral pulses—including those of his femoral and carotid arteries—

were normal. He had no carotid bruit and no abnormal neurological signs. His electrocardiogram, chest x-ray picture, erythrocyte sedimentation rate, and full blood count (which Dr Smith arranged) are normal apart from some voltage changes indicating left ventricular hypertrophy.

I suspect that this man's symptoms are due to widespread atheromatous arterial disease. His present neurological symptoms are much more suggestive of focal epilepsy (probably due to cerebrovascular disease) than transient ischaemic episodes, and since they appear to be waning I would suggest you watch his progress. Nevertheless, we should attend to the three major "risk" factors in determining cardiovascular disease—hyperlipidaemia, hypertension, and smoking. He needs to have his fasting serum cholesterol and triglyceride concentrations estimated as well as a lipoprotein electrophoretic strip. His hypertension needs careful control, and he should stop smoking immediately. He has promised to do this and is coming to see you tomorrow morning for his fasting blood tests.

I would continue hydrochlorothiazide but I would suggest you transfer him to a beta-blocker such as propranolol, starting at a dose of 40 mg thrice daily and increasing it in the light of the clinical response. This is for two reasons: firstly, hypotensive control with beta-blockers usually has fewer adverse effects than with methyldopa and, secondly, because beta-blockade appears to prevent "sudden death" in the secondary prevention of myocardial infarction.

Patients vary in their dosage requirements of propranolol probably for two reasons: firstly, a large fraction of an oral dose of propranolol is removed by the liver before it ever reaches the systemic circulation, and this fraction varies between individuals; and, secondly, individuals vary in their response to the drug even at the same plasma concentration, possibly dependent on their plasma renin activity. There is therefore no substitute for careful dosage titration against the response.

It is easy to give patients a supply of drugs, tell them to come back when they are running low, and then forget all about them. One system is to give the patient a card saying "your next appointment is . . ." and at the same time enter it in the appointments book.

Postscript

On a combination of hydrochlorothiazide (50 mg once daily) and propranolol (160 mg three times a day) Mr GH's blood pressure stabilised at 130-140/85-95 mm Hg. The arrangements for checking on patients on long-term follow-up have been amended.

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