JAMC, Vol. 5, No. 2, 1992

CASE REPORT

INAPPROPRIATELY TREATED INTRACTABLE COUGH

Muhammad Tahir Khattak

SUMMARY:

Chronic, non-productive cough has a variety of causes. In most cases the etiology is readily identifiable and treatable. Occasionally drugs induce a persistent cough which necessitates withdrawal of the offending agent. A case is presented in which drug- induced cough was misdiagnosed and inappropriately managed.

CASE REPORT:

A 51 years old teacher sought consultation because of a chronic, persistent and troublesome non-productive cough of eight weeks' duration and hypertension. He had enjoyed good health over the years but was found to be hypertensive 2 years ago and was treated with methyldopa by his local general practitioner. He used to smoke 15 cigarettes a day but had stopped smoking 6 months ago because of uncontrolled blood pressure. At this time, he was changed to verapamil but with no significant improvement in his blood pressure recordings. This was substituted with Enalapril 10 mg daily with which his blood pressure stabilized. Soon, however, he developed a dry, tickly cough which became more persistent and troublesome as the days and weeks passed. For this he was treated with antitussives, cough linctus and antibiotics with no effect. His practitioner then thought it best to investigate him. A full blood count and a differential count with ESR were normal. Widal test and blood for malarial parasites was negative. His electrocardiogram was normal and his chest radiograph was clear. On clinical suspicion, his practitioner started him on antituberculous therapy. His chest radiograph was repeated after a fortnight which remained clear. Inspite of this his antituberculous treatment was continued. As his symptoms had persisted inspite of treatment he sought further consultation.

Except for the persistent and non-productive cough, he offered no other symptoms. General physical and systemic examination was unremarkable and his blood pressure was well controlled.

In the absence of any other cause his cough was assumed to be due to ACE-Inhibitor treatment and so his Enalapril was stopped and was substituted with a Beta-Blocker. Anti-TB drugs were also discontinued. On a subsequent follow-up visit his cough had subsided, his blood pressure was reasonably well controlled and he was symptom free.

DISCUSSION:

ACE-inhibitors arc a relatively new class of drugs. They primarily act on the rennin-

From Ayub Medical College, Abbottabad.
MOHAMMAD TAHIR KHATTAK, MBBS, MRCP, D. CARD., Assistant Professor Cardiology.

angiotensin-aldosterone system and inhibit the conversion of angiotensin I to angiotensin II in the circulation.[1] This secondarily leads to a lowering of the blood pressure. ACE- inhibitors are now widely prescribed by general practitioners and general physicians alike, both for the treatment of hypertension and heart failure. ACE-inhibitors are effective in lowering blood pressure in all forms of hypertension: mild, moderate or severe. They are safe and generally well tolerated and are also likely to improve quality of life. They also improve mortality and prognosis in heart failure patients.

Cough, although uncommon, is the commonest reported side effect of ACE- inhibitor.[2] Cough is a feature which is common to all ACE-inhibitors and not Enalapril alone.[3] It is a group effect and is not dose-related. Usually it is mild, dry and with a tickly sensation in the throat and occasionally nasal stuffiness. In most of the cases it does not require discontinuation of treatment. At times the cough can become severe, persistent and troublesome in which case treatment has to be stopped. Changing to another ACE- inhibitor does not lead to disappearance of the cough. Goldszer et. al. reported that the frequency of cough with enalapril is 24.7% whereas with captopril it is 11.5%/ Williams, however, has reported a frequency of cough-induced by captopril at 0.5% and that by enalapril at 1.3%.[5]

It has been suggested that the frequency of cough increases with the duration of action of the drug and tends to be greater with longer acting ACE-inhibitors.[4] Thus it is more likely with Lisinopril and Enalapril than with Captopril. Other reported studies do not, however, suggest a relationship between the duration of action of ACE-inhibitors and the incidence of side effects.[6] It has been reported that cough occurs more commonly in females than in males. [7] It has also been suggested that the incidence of cough increases with age but this could be a reflection of their increasing use in elderly patients.

The mechanism of the cough is thought to be due to the effect of ACE-inhibitors on bradykinin and prostaglandin production. These may act as irritants in sensitive areas of the respiratory airways and thereby produce the cough. Bradykinin can produce bronchial constriction[8] and stimulate afferent Vagal C fibers. [5] Bradykinin leads to increased production of prostacyclin and prostaglandin E_2[9]. Prostaglandin E_2 has an irritant effect on the respiratory passages.[5] Sulindac has reportedly suppressed ACE- inhibitor induced cough supporting the role of prostaglandins in the etiology of the cough.[10].

This case illustrates the fact that chronic cough can occasionally be drug-induced. Unfamiliarity with the common side effects of drugs used can occasionally lead to an erroneous diagnosis, unnecessary investigations and inappropriate treatment. It can be hazardous to injudiciously prescribe anti-tuberculous drugs and this expose the patient to the risk of further side-effects some of which can be quite significant.

Drug-induced side effects arc quite common and most are easily diagnosed. A good history, physical examination coupled with a high index of suspicion for drug-induced side-effects should enable one to come to a conclusion as to whether the problem is due to the disease or is iatrogenic. Practicing doctors should be aware of the common side- effects of the drugs they prescribe so as to avoid mishaps and inconvenience to their patients.

REFERENCES:

1. In Braunwald E. Heart Disease. A textbook of Cardiovascular Medicine. 3rd Ed., WB Saunders Company, 1988.
2. Hume, A., General, J. Converting Enzyme Inhibitors in the treatment of Hypertension (Later) N. Eng. J. Med. 1989; 320: 1750.
3. Israel-Biet, D., Delaisements, C., Chretien, J. Enalapril-induced cough (Later) Lancet, 1986; 2: 918.
4. Goldszer, R.C., Lilly, L.S., Solomon, H.S. Prevalence of cough during angiotensin-converting inhibitor therapy. Am. J. Med. 1988; 85: 887.
5. Williams, G.H. Converting Enzyme Inhibitors in the treatment of Hypertension. N. Eng. J. Med. 1988; 319: 1517-25.
6. Powell, W.J. Converting-enzyme inhibitors in the treatment of hypertension (Letter) N. Eng J. Med. 1989; 320:1750-51.
7. Couler, D.M., Edwards, I.R. Cough Associated with captopril and enalapril. BM J 1987; 294: 1521-3.
8. Sample, P.F., Heerd, G.W. Cough and Wheeze caused by inhibitors of angiotensin converting enzyme (Letter)N. Eng. J. Med. 1986; 314: 61.
9. Swartz, S.L., Williams, G.H. angiotensin-converting enzyme inhibition and prostaglandins. Am. J. Cardiol, 1982; 49: 1405-9.
10. Nicholls, M.G., Gilchrist, N.L. Sulindac and cough induced by converting enzyme inhibitors. Lacent, 1987; I: 872.