

# The role of pharmacists in the management of hypertensive diabetic patients

A Adeyemi and M O Adetoro

Diabetic mellitus is a chronic metabolic disorder in which glycaemic control is important to prevent complications. Type 1 diabetes is a result of an absolute lack of insulin, whereas type 2 diabetes is due to partial insulin deficiency and/or insulin resistance; it is also strongly influenced by environment and lifestyle factors.

Diabetes is a major cause of blindness, coronary heart disease, lower limb amputation, and kidney failure. On average, a patient with diabetes spends approximately 6 days a year in hospital compared with an average of 1 day for a non-diabetic patient.<sup>1</sup> The aims of managing patients with diabetes include control of symptoms, screening for complications, and prevention of long-term complications. The prevention of complications relies on achieving blood glucose control,<sup>2,3</sup> along with management of other risk factors, including hypertension and hyperlipidaemia.<sup>4,5</sup>

Hypertension is the most important factor that promotes the progression of diabetic nephropathy.<sup>6</sup> Through intervention, there is, therefore, the possibility of reducing potential morbidity and mortality.

The pharmacist has an important role in the approach to the management of hypertension in diabetic patients, through intervention as an educator to both patients and physicians. Pharmacists have the responsibility of educating the physicians on current clinical recommendations, including the renoprotective benefits of angiotensin converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs).<sup>7,8</sup>

It has been shown that ACE and ARB drugs reduce progression of microalbuminuria to nephropathy, and slow the progression of established nephropathy.<sup>8,9</sup> This is true even in normotensive patients with these renal complications. In addition to this 'renoprotective' action, ACE and ARB drugs may offer cardiovascular protection,<sup>10</sup> though this effect is less well established. Pharmacists can thus advise on choices of antihypertensive drugs, as well as oral hypoglycaemic agents (OHAs), and other medications used in the treatment of diabetes.

## The pharmacist's role in type 2 diabetes

Pharmacists are already involved in diabetes care.<sup>11</sup> They are part of a diabetes care team, along with doctors,

nurses, and dieticians – all have complementary roles. With the shortage of doctors in developing countries, an extended role for the pharmacist in diabetes care is especially appropriate.<sup>12</sup>

Potential responsibilities of the pharmacist include:

- general diabetes-related education;
- teaching blood glucose monitoring;
- encouraging drug compliance;
- stressing the importance of diet and exercise;
- recognition of hyperglycaemia and hypoglycaemia;
- managing hypertension in diabetes.

Hypertension is a particularly appropriate part of diabetes care in which the pharmacist can be involved. They can encourage non-drug treatment (weight reduction, and salt and alcohol moderation), and counsel on drug effects and side-effects. Blood pressure (BP) levels can be measured and regularly monitored, and anti-hypertensive drugs introduced, and doses titrated as necessary and appropriate. The extended role of pharmacists in diabetes care described here will save precious time resources for doctors and nurses, and allow more effective treatment of hypertension.

## References

1. Wagner EH, Sandhu N, Newton K, et al. Effect of improved glycaemic control on health care costs and utilisation. *JAMA* 2001; 285: 182-9.
2. Andersson DKG, Svardsudd K. Long-term glycaemic control relates to mortality in type 2 diabetes. *Diabetes Care* 1995; 18: 1534-43.
3. Diabetes Control and Complication Trial Research Group. The relationship of glycaemic exposure (HbA<sub>1c</sub>) to the risk of development and progression of retinopathy in diabetes control and complications trial. *Diabetes* 1995; 44: 968-83.
4. Moss SE, Klein R, Klein BEK, Meuer MS. The association of glycaemic and cause specific mortality in a diabetic population. *Arch Int Med* 1998; 154: 2473-9.
5. Tatti P, Pahor M, Byington RP, et al. Outcome results of the Fosinopril, Versus Amlodipine Cardiovascular Events Randomised Trials (FACET) in patients with hypertension and NIDDM. *Diabetes Care* 1998; 21: 597-603.
6. Hardy KJ, Furlong NJ, Hulme SA, O'Brien SV. Delivering improved management and outcomes in diabetic kidney disease in routine clinical care. *Brit J Diab & Vasc Disease* 2007; 7: 172-8.
7. Vora JP, Leese GP, Peters JR, Owens DR. Longitudinal evaluation of renal function in non-insulin dependent diabetic patients with early nephropathy: effects of angiotensin-converting enzyme inhibition. *J Diabetes Complicat* 1996; 10: 88-93.
8. Paring HH, Lehnert H, Brockner-Mortenson J, et al. The effect of irbersartan on the development of diabetic nephropathy in patients with type 2 diabetes. *New Engl J Med* 2001; 345: 870-8.
9. Lewis EJ, Hunsicker LG, Clarke WR, et al. Renoprotective effect of the angiotensin-receptor antagonist irbersartan in patients with nephropathy due to type 2 diabetes. *New Eng J Med* 2001; 345: 851-60.
10. Brenner BM, Cooper ME, de Zeeuw D, et al. Effects of cosartan on renal and cardiovascular outcomes in patients with type 2 diabetes. *New Eng J Med* 2001; 345: 861-9.
11. Ladros L, Ledger-Scott M, Barnes E. The benefit of a pharmacist-led type 2 diabetes clinic. *Hosp Pharmacist* 2002; 9: 204-6.
12. Haddard S, Fourvior P, Mackouf N, Yatara F. What does quality mean to lay people: community perception of primary health care services in Guinea. *Soc Sci Med* 1998; 47: 381-94.

A Adeyemi, Department of Pharmacy,  
Ring Road State Hospital, Ibadan, Nigeria and  
M O Adetoro, Director of Pharmaceutical Services,  
Ministry of Health, Secretariat, Ibadan, Nigeria.  
Correspondence to: Pharm. Awolola Adeyemi, PO Box  
7648, Secretariat Post Office, Agodi, Ibadan, Nigeria.  
Email: Awololaadeyemi@yahoo.co.uk