

DIABETES TREATMENT IN MALTA: NEED FOR NEW TREATMENT OPTIONS

**Professor Stephen Fava MD, MRCP(UK), FACP, FEFIM, FRCP(Lond0,
MPhil(Melit), PhD(Exeter)**

Consultant in Diabetes, Endocrinology & Medicine

Head, Diabetes & Endocrine Centre, Mater Dei Hospital

Chairperson, Department of Medicine, Mater Dei Hospital

Diabetes is common condition world-wide, especially in the elderly (1). Poor glycaemic control is known to be associated with increased risk of microvascular disease, peripheral vascular, cerebrovascular disease, coronary artery disease, heart failure and cataracts (2). The risk of infections also rises progressively with rising blood glucose. Apart from these classical diabetes complications, inadequate blood glucose control is also associated with other, more recently recognized complications, including dementia (3, 4). Blood glucose rise after meals is also associated with cardiovascular disease (5).

Unfortunately, many of the treatments currently available to treat diabetes can cause hypoglycaemia (low blood sugar). This is associated with decreased health-related quality of life (6) and with increased risk of accidents (7). Insulin treatment in the elderly is also associated

with increased risk of falls (8). The risk of falls increases progressively with tighter control in elderly insulin-treated diabetic subject (9). Hence, currently one has to choose between either attempting good control with the serious risk of hypoglycaemia, or less tight control in order to avoid hypoglycaemia but at risk of predisposing to long-term complications (10).

Therefore there is an urgent need to introduce new and safe medication to treat diabetes in the National Formulary. Although there is a cost implication in introducing new medicines, this has to be balanced against their benefit in helping to achieve good blood glucose control and therefore reduce the risk of complications, and to do this with a low risk of hypoglycaemia. Even from a purely economic perspective, one has to bear in mind that most of the expense in treating diabetes is related to treatment of its complications (11-14). Hypoglycaemia is also associated with significant health costs (15). Therefore investing in the treatment of diabetes, which improve glucose control with a low risk of hypoglycemia, will eventually result in cost savings (16).

Finally, one should note that some of the newer anti-diabetes have been shown to reduce mortality when compared to the older which are available in the local National Formulary (17, 18).

In conclusion, there is an urgent need to introduce new ant-diabetes drug treatment in the local National Formulary.

REFERENCES

1. McDonald M, Hertz RP, Unger AN, Lustik MB. Prevalence, awareness, and management of hypertension, dyslipidemia, and diabetes among United States adults aged 65 and older. *J Gerontol A BiolSci Med Sci*. 2009; 64A:256–63.
2. Stratton IM, Adler AI, Neil HA, Matthews DR, Manley SE, Cull CA, Hadden D, Turner RC, Holman RR. Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 2000; 321: 405-12.
3. Mortimer JA, Borenstein AR, Ding D, Decarli C, Zhao Q, Copenhaver C, Guo Q, Chu S, Galasko D, Salmon DP, Dai Q, Wu Y, Petersen R, Hong Z. High normal fasting blood glucose is associated with dementia in Chinese elderly. *Alzheimers Dement* 2010; 6:440-47.
4. Cukierman-Yaffe T, Gerstein HC, Anderson C, Zhao F, Sleight P, Hilbrich L, Jackson SH, Yusuf S, Teo K; ONTARGET/TRANSCEND Investigators. Glucose intolerance and diabetes as risk factors for cognitive impairment in people at high cardiovascular risk: results from the ONTARGET/TRANSCEND research programme. *Diabetes Res ClinPract* 2009; 83:387-93.
5. Fava S: Role of postprandial hyperglycemia in cardiovascular disease. *Expert Review of Cardiovascular Therapy*. 2008; 6:859-872
6. Levy AR, Christensen TL, Johnson JA. Utility values for symptomatic non-severe hypoglycaemia elicited from persons with and without diabetes in Canada and the United Kingdom. *Health Qual Life Outcomes* 2008; 6:73
7. Hitchen L. Doctors are failing to tell diabetic people about UK driving rules. *BMJ* 2006; 8;332(7545):812
8. Christensen TL, Johnson JA, Schwartz AV. Older women with diabetes have a higher risk of falls: a prospective study. *Diabetes Care*. 2002;25:1749-54

9. Schwartz AV, Vittinghoff E, Sellmeyer DE, Feingold KR, de Rekeneire N, Strotmeyer ES, Shorr RI, Vinik AI, Odden MC, Park SW, Faulkner KA, Harris TB. Health, Aging, and Body Composition Study. Diabetes-related complications, glycemic control, and falls in older adults. *Diabetes Care* 2008; 31:391–6
10. Fava S. Glycaemic control: a balancing act or a different approach? *Curr Diabetes Rev* 2014,10:214-30
11. Clarke P, Gray A, Legood R, Briggs A, Holman R. The impact of diabetes-related complications on healthcare costs: results from the United Kingdom Prospective Diabetes Study (UKPDS Study No. 65). *Diabet Med*. 2003 Jun;20(6):442-50.
12. Arrieta F, Rubio-Terrés C, Rubio-Rodríguez D, Magaña A, Piñera M, Iglesias P, Nogales P, Calañas A, Novella B, Botella-Carretero JI, Debán C, Zamarrón I, Mora G, Balsa JA, Vázquez C; Study Group on Diabetes. Estimation of the economic and health impact of complications of type 2 diabetes mellitus in the autonomous community of Madrid (Spain). *Endocrinol Nutr*. 2014 Apr;61(4):193-201. doi: 10.1016/j.endonu.2013.11.005. Epub 2014 Jan 17.
13. Ward A, Alvarez P, Vo L, Martin S. Direct medical costs of complications of diabetes in the United States: estimates for event-year and annual state costs (USD 2012). *J Med Econ*. 2014 Mar;17(3):176-83.
14. Vupputuri S, Kimes TM, Calloway MO, Christian JB, Bruhn D, Martin AA, Nichols GA. The economic burden of progressive chronic kidney disease among patients with type 2 diabetes. *J Diabetes Complications*. 2014 Jan-Feb;28(1):10-6.
15. Brod M, Wolden M, Christensen T, Bushnell DM. Understanding the economic burden of nonsevere nocturnal hypoglycemic events: impact on work productivity, disease management, and resource utilization. *Value Health*. 2013 Dec;16(8):1140-9.

- 16.** Fitch K, Pyenson BS, Iwasaki K. Medical claim cost impact of improved diabetes control for medicare and commercially insured patients with type 2 diabetes. *J Manag Care Pharm.* 2013 Oct;19(8):609-20, 620a-620d.
- 17.** Zhang Y, Hong J, Chi J, Gu W, Ning G, Wang W. Head-to-head comparison of dipeptidyl peptidase-IV inhibitors and sulfonylureas - a meta-analysis from randomized clinical trials. *Diabetes Metab Res Rev* 2014;30(3):241-56.
- 18.** Wu D, Li L, Liu C. Efficacy and safety of dipeptidyl peptidase-4 inhibitors and metformin as initial combination therapy and as monotherapy in patients with type 2 diabetes mellitus: a meta-analysis. *Diabetes Obes Metab* 2014;16(1):30-7.