ABSTRACTS

Botswana's national HIV/AIDS treatment programme: 2002 - 2010

Farahani *et al.* analysed the effect of the implementation of Botswana's national antiretroviral treatment programme (Masa ('new dawn')), which was started in January 2002, up to 2010. It is known that short-term mortality among HIV patients receiving antiretroviral therapy in sub-Saharan Africa is higher than that recorded in high-income countries. So far, no systematic long-term comparisons have been made because of the scarcity of available data.

Data for patients who were eligible for antiretroviral therapy, according to Botswana's national guidelines, were collected prospectively through a clinical information system developed by the Botswana Ministry of Health. A dataset of all available electronic records for adults patients (>18 years old) who had enrolled by 30 April 2010 was anonymised, extracted and used for analysis by the study team. The primary outcome was mortality. Loss to follow-up was established using a sensitivity analysis, which assumed that varying proportions of the population lost to follow-up had died

The study team analysed the records of 126 263 patients, of whom 102 713 had documented initiation of antiretroviral therapy. The median follow-up time was 35 months, with a median of 8 follow-up visits. More than half (63%) of the study population were women, with a median age at baseline of 34 years. The median age for men was 38 years. During the 9 years of the study 10 230 deaths were recorded and mortality was highest during the first 3 months after treatment had started, but this decreased in the second year of treatment, decreasing still further during the next 7 years of follow-up.

In each calendar year after the start of the Masa programme, average $CD4^+$ cell counts at enrolment increased (from 101 cells/µl in 2002 to 191 cells/µl in 2010). In each year, the proportion of the total enrolled population who died in that year decreased, from 63% (88 of 140) in 2002 to 0.8% (13 of 1 599) in 2010. A sensitivity analysis, assuming that 60% of the population lost to follow-up had died, showed 3 000 additional deaths, increasing overall mortality from 8% to 11 - 13%.

The conclusion was that the Botswana national HIV/AIDS treatment programme reduced mortality among adults with HIV to levels that were similar to those of other low-income or middle-income countries.

Farahani M, Vable A, Lebelonyane R, et al. Outcomes of the Botswana national HIV/AIDS treatment programme from 2002 to 2010: A longitudinal analysis. Lancet Global Health 2014;2(1):e44-e50. [http://dx.doi.org/10.1016/S2214-109X(13)70149-9]

Diuretics, beta-blockers and statins and new-onset type 2 diabetes

Beta-blockers, diuretics and statins are established drugs in the management of cardiovascular disease and there is general consensus that statins reduce risk factors for coronary artery disease. However, there continues to be debate about their role in primary prevention in lower-risk populations. One of the main areas of controversy is the association of statins with new-onset type 2 diabetes. Shen *et al.*, writing in the *British Medical Journal*, examined the degree to which using beta-blockers, statins and diuretics in patients with impaired glucose tolerance and other cardiovascular risk factors is associated with new-onset diabetes.

Their study focused on a re-analysis of data from the Nateglinide and Valsartan in Impaired Glucose Tolerance Outcome Research (NAVIGATOR) trial. This trial enrolled patients who, at baseline, were treatment naïve to beta-blockers, diuretics, statins and calcium channel blockers, the latter being used as metabolically neutral controls.

Their main outcome measure was the development of new-onset diabetes diagnosed using standard plasma glucose levels in all participants, which was confirmed with glucose tolerance testing within 12 weeks.

During five years of follow-up, beta-blockers were prescribed to 915 patients, diuretics to 1 316, statins to 1 353 and calcium channel blockers to 1 171. After adjusting for confounders, the analysis found that both diuretics and statins were associated with an increased risk of new-onset diabetes, but beta-blockers and calcium channel blockers were not.

This study adds to the body of evidence that suggests that in high-risk patients with impaired glucose tolerance the use of diuretics and statins may be associated with an increased risk of new-onset diabetes.

Shen L, Shah BR, Reyes EM, et al. Role of diuretics, β blockers, and statins in increasing the risk of diabetes in patients with impaired glucose tolerance: Reanalysis of data from the NAVIGATOR study. Br Med J 2013;347:f6745. [http://dx.doi.org/10.1136/bmj.f6745]

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