NIHR Group on the Prevention and Management of HIV-infection and non-communicable diseases in Africa.

INTEGRATED MANAGEMENT OF HIV-INFECTION, DIABETES AND HYPERTENSION

28 October 2020

Why are diabetes and hypertension such major health challenges in Africa?

Diabetes and hypertension are chronic lifelong conditions that are responsible for about 2 million deaths in Africa each year. There are effective treatments for these conditions, but in Africa, their burden has risen sharply in a short period of time alongside a continuing high burden from infectious diseases. Health services are not designed to meet this new challenge. Only 10-20% of people living diabetes or hypertension are estimated to be in regular care.

Identifying efficient cost-effective approaches to increase access to health services for the management of diabetes and hypertension for populations in Africa represents one of the greatest public health challenges of our time.

How is HIV chronic care organised?

Health services in most African countries are generally designed for dealing with acute infections and experience of chronic care management is limited, except for HIV-infection which, like other chronic diseases, requires life-long management. In Eastern and Southern Africa 83% of people who know they have HIV-infection are in regular care, with 90% of these virally suppressed, compared to a retention rate of about 50% a decade or so ago when antiretroviral programmes were new. HIV associated mortality has declined from over 2 million a year to less than half a million a year and hypertension and diabetes will need to achieve similar levels of retention and disease control to achieve the large declines in mortality needed to meet the Sustainable Development Goals.

One reason why HIV services have been successful is because they have been organised in stand-alone clinics in most African countries from shortly after the time that effective anti-retroviral drug combinations became available. People living with HIV-infection are managed in separate primary care clinics, with separate drug and diagnostic procurement channels and a separate funding stream.

Why is there a need for research?

Now that the burden of other chronic conditions is a rapidly increasing public health problem, how should African health systems organise their services? Separate stand-alone clinics for each chronic condition are unlikely to be affordable for governments and hugely problematic for patients with multiple conditions.

Managing different chronic conditions in the same clinic (i.e. integrated management) could reduce the duplication of health care resources and, crucially, could enable the learning acquired by HIV treatment programmes to be applied to the control of other chronic conditions. However, in resource-constrained health systems, expanding the focus of health care provision could put at risk the gains achieved by HIV control programmes.

Key Questions addressed in this research study

1. *Is integrated management feasible and acceptable?*
2. *Does it lead to improved retention in care for people living diabetes or hypertension?*
3. *Does it adversely affect the outcomes among people living with HIV-infection?*

What is the aim of our research group?

Our long-term aim is to generate evidence for policy-makers in Africa and for experts sitting in guideline committees in the World Health Organisation. This evidence could help them in their considerations of how chronic diseases should be controlled in Africa.

This is a controversial area. Some patients, health care providers, and health policy makers have strong views on how people with these conditions should be managed. Before we started this research, there was little evidence to guide us or suggest that integrated management could be effective or be ineffective. Therefore, our first step was to conduct an initial study that would inform a much larger investigation. The findings from this study are described here.

The NIHR Group on the prevention and management of HIV-infection and non-communicable diseases, comprising researchers, policy makers, patient representatives. Uganda 2019

What did we evaluate in this study?

In largely urban settings in Tanzania and Uganda, and working in close collaboration with policy makers and senior disease control managers, we conducted the first ever study in Africa to evaluate integrated management for HIV-infection, diabetes and hypertension.

We worked in 10 health facilities located in largely urban settings in Tanzania and Uganda and enrolled an average of just over 200 patients at each facility. Thus, these patients were a subset of those currently receiving care in standalone clinics. They were recruited into integrated care clinics to receive their treatments and were followed up for 6-12 months.

The integrated care clinics were organised and run by health care staff. Patients with either HIV-infection, diabetes, hypertension or a combination of these had the same waiting area, saw the same physicians in the same consultation rooms, and went to the same pharmacy. Clinical management was close to normal health service conditions and done by government clinical staff. In order to ensure equity in service provision, we put in place basic measures to strengthen medicines supply, adherence counselling and telephone follow-up for patients who failed to attend scheduled appointments (these were already available for people with HIV-infection). We also provided training to all health care staff to ensure a common understanding of clinical management for HIV-infection, diabetes and hypertension.

What were the findings from the study?

Most patients approached agreed to join the study whether they had a single chronic condition or had multiple conditions. Overall, 2,273 patients were enrolled and followed up for a median of just over 8 months.

The proportions alive and retained in care at study end were high among all participants: 83% among people living with HIV-infection, 85% among those with diabetes, 79% among those with hypertension and 91% among those with multiple conditions.

Although the retention rates were high, and there were improvements in blood pressure and diabetes markers at study end compared with baseline, the control of blood pressure and of blood glucose were poor. Among all persons who had hypertension (whether alone or in addition to diabetes or HIV), just 54% had good control of blood pressure (<140/90 mmHg). For diabetes, just 24% had good control of their fasting blood glucose (<6.1 mmol/L). On the other hand, patients living with HIV-infection did achieve good control of virus levels in the integrated clinic, with virus well suppressed in 89% (<100 copies per ml).

One of 10 clinics which introduced an integrated management clinic for people living with HIV-infection, diabetes or hypertension.

Analyses of costs showed that integration of services reduced both health service costs and household costs and could be an efficient way of increasing coverage of services for diabetes and hypertension.

What do the results mean for policy and practice?

We've shown that the introduction of basic measures to strengthen health care provision, combined with an integrated approach, could achieve high levels of retention for people living with diabetes and hypertension, similar to that now regularly being achieved for people with HIV-infection. Crucially, the re-organisation of care did not adversely affect HIV outcomes – 89% of patients with HIV-infection achieved a virus suppression of less 100 copies per ml at the study end.

Although these are positive findings, the study was small. It also did not have a comparison group and so we cannot tell the extent to which the improvement was due to integrated management or due to improvements in health care delivery brought about by the research. Re-organisation of health care provision would affect many millions of people and a second larger study with a comparison group is needed to expand the evidence-base on integrated management of chronic diseases in Africa.

Patients with different conditions attending an integrated management clinic.

Contacts for additional information:

Uganda	**Tanzania**
Dr Ivan Namakoola Tel: +256 772494942	Dr Sokoine Kivuyo Tel: +255 763244779
Dr Josephine Birungi. Tel: +256 772301907	Dr Kaushik Ramaiya Tel: +255 713618495
Prof Moffat Nyirenda Tel: +256 4147704000	Prof Sayoki Mfinanga Tel: +255 784755632
Emergency Tel: +256 752774112	Emergency Tel: +255 222152232