

RESEARCH ARTICLE

Appropriateness and affordability of prescriptions to diabetic patients attending a tertiary hospital in Eastern Uganda: A retrospective cross-sectional study

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Abstract

Background

Irrational prescription of drugs can lead to high cost of treatment thus limiting access to essential medicines. We assessed the affordability and appropriateness of prescriptions written for diabetic patients in Eastern Uganda.

Methods

We collected secondary data from the health management information system registers of patients who attended the outpatient medical clinic at Mbale regional referral hospital from January 2019 to December 2019. The average cost of the prescriptions was calculated and adjusted odds ratios for predictors for unaffordability estimated using logistic regression. Computed scores for indicators of rational drug prescription were used to assess the extent of rational prescribing.

Results

The median cost per prescription was USD 11.34 (IQR 8.1, 20.2). Majority of the diabetic patients ($n = 2462$; 94.3%, 95% CI: 93.3–95.1%) could not afford the prescribed drugs. Predictors for unaffordability were if a prescription contained: ≥ 4 medicines (AOR = 12.45; 95% CI: 3.9–39.7); an injectable (AOR = 5.47; 95%CI: 1.47–20.32) and a diagnosis of diabetes mellitus with other comorbidities (AOR = 3.36; 95%CI: 1.95–5.78). Having no antidiabetic drug prescribed was protective for non-affordability (AOR = 0.38; 95%CI: 0.24–0.61). The average number of drugs per prescription was 2.8. The percentage prescription of drugs by generic name and from the essential medicine and health supplies list of Uganda were (6160/7461; 82.6%, 96% CI: 81.7%–83.4%) and (6092/7461; 81.7%, 95% CI: 80.8%–82.5%) respectively against WHO standard of 100%.

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Conclusion

The majority of diabetic patients (94.3%) in Eastern Uganda cannot afford to buy prescribed medicines. The government should therefore ensure that essential medicines are readily accessible in public health facilities.

Introduction

Diabetes mellitus (DM) is a chronic metabolic disorder associated with various complications and comorbidities such as peripheral vascular disease, coronary artery disease, hypertension, metabolic syndrome among others. By 2016, over 463 million people were diagnosed to have DM globally and in Uganda the prevalence was at 2.7% [1]. It was predicted that by 2035, the prevalence of DM in Uganda and many developing countries would have doubled [2]. The International Diabetes Federation (IDF) estimated that the number of people with DM in Africa will increase from 14.2 million in 2015 to about 34.2 million in 2040. This would translate to an increase in the global expenditure from the current \$673 billion to about \$802 billion assuming constant per capita healthcare expenditures [3]. The use of anti-diabetics and other drugs is an integral component in the management of DM and its associated comorbidities in many health care systems. However, the total availability of most anti-diabetic and anti-hypertensive drugs is usually low, especially in primary hospitals and in the absence of health insurance reimbursement in developing countries [4].

The World Health Organization (WHO) acknowledged that access to essential medicines in many developing countries is a serious challenge. Their health care systems are highly constrained by the limited essential medicine supplies and overwhelmingly high patient turn up [5,6].

In Uganda, 2 in 10 individuals diagnosed with a chronic disease such as DM actually had a medicine for that disease available at home [7]. This limited access to essential antidiabetic medicines in public health facilities cause patients to purchase these drugs from pharmacies, retail drug shops and private hospitals. However, studies have reported that many of the prescribed antidiabetic and antihypertensive medicines are unaffordable to the public in developing countries. For instance in Zambia, majority of surveyed antidiabetic and antihypertensive medicines were inadequately available (<80%) and most of them were unaffordable [8]. This is because apart from a significant number of people living below the poverty line in such countries, they have a high disease burden and inadequate access to basic needs of life. This results into non-adherence to treatment schedules and eventually poor treatment outcomes [9].

The WHO recommends that medicines are appropriately prescribed and dispensed while being used during diagnosis, prevention and treatment of diseases and this is what is referred to as “rational drug use”. Irrational prescription practices such as polypharmacy, over prescription of injectable and antibiotics, prescription of medicines outside the essential medicine list and not following standard treatment guidelines are common among health care systems in developing countries [10]. Inappropriate drug prescribing and dispensing is responsible for more than 50% wastage in expenditure on essential medicines. Irrationally prescribed drugs do not only increase patient and government expenditures but also may result into drug toxicities. Therefore, we undertook this study to evaluate the appropriateness and affordability of prescriptions for diabetic patients attending the medical special clinic at Mbale regional referral hospital, the largest public tertiary hospital in Eastern Uganda.