SUMMARY

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THE **VALUE** OF INSULIN

This summary provides guidance for procurement or reimbursement agencies on the cost-effectiveness of human versus analogue insulin for people living with type 1 or type 2 diabetes. It is based on the ACCISS Tool, The Value of Insulin: A Systematic Review of the Cost-effectiveness of Analogue and Human Insulin, available at: www.accisstoolkit.haiweb.org

INTRODUCTION

Insulin is a life-saving medicine for the millions of people worldwide living with type 1 or type 2 diabetes. Despite the fact that it has been almost 100 years since this medicine was first used clinically, half of those who need insulin still face challenges accessing it (1). The innovative global study, Addressing the Challenge and Constraints of Insulin Sources and Supply (ACCISS), sets out to identify the causes of poor availability and high insulin prices, and develop policies and interventions to improve access to insulin, particularly in low- and middle-income countries (LMICs).

OVERVIEW

In wealthy countries, the use of analogue insulin products has surpassed that of human insulin products (2, 3). Many clinicians in high-income settings prefer analogue insulins. Both types of insulin are safe and effective, however, analogue insulins are substantially more expensive than human insulins. There is no agreement about whether the use of analogue insulins is cost-effective when compared to human insulin.

A systematic review of 30 published cost-effectiveness studies compared analogue versus human insulin in type 1 and type 2 diabetes. The vast majority of studies were conducted in high-income settings, with 24 of the 30 (80 percent) studies being from North America or Europe. Only three studies (10 percent) were set outside high-income countries, and only two (seven percent) were independently funded (i.e., not sponsored by insulin manufacturers).

FINDINGS

The ACCISS review found that the outcome of the cost-effectiveness study was related to the country income setting, the funder of the study, and to the price of the analogue insulin chosen for the comparison with human insulin.

Industry-funded studies almost universally concluded that analogue products are cost-effective. Furthermore, industry-sponsored studies selected clinical treatment effects most likely to show an advantage towards analogue insulins.

The only two independently-funded cost-effectiveness studies came to a different conclusion: insulin analogues were generally not cost-effective when compared to human insulin, with a possible exception for rapid-acting analogues for type 1 diabetes.

Based on the three independent studies, analogue products, which are higher priced than human insulin, are highly unlikely to be cost-effective.

RECOMMENDATIONS

Type 2 diabetes: LMICs may wish to procure long-acting analogues when their prices are comparable to—or only slightly higher priced than—human insulins (i.e., NPH and 70/30). There is no evidence that long-acting analogues are cost-effective in lower-income settings.

Type 1 diabetes: LMICs should choose rapid-acting analogues only when the price difference between the analogue and human insulin is negligible or small. Policy-makers may wish to avoid long-acting analogues because one independently-funded study found that detemir and glargine were not cost-effective when compared against human insulin, even in a high-income setting (Canada).

REFERENCES

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