Anaesthesia-related mortality in Sub-Saharan African countries

A systematic review of the indexed and non-indexed literature

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Aim

We set out to estimate anaesthesia-related mortality in Sub-Saharan Countries based on the indexed and non-indexed (grey) literature.

Methods

Reports on dichotomous anaesthesia-related mortality in Sub-Saharan African countries (except South Africa) were systematically searched until April 2017. Searches were done in medical databases (PubMed, Cochrane, Web of Science, Embase – indexed literature), and African medical journals, African National Congresses on obstetrics and surgery, medial theses and Google (non-indexed literature). Definitions of anaesthesia-related mortality were taken as reported in the individual reports. No restriction was applied concerning date or language of publication, or type of surgery. The Human Development Index, a summary measure of average achievement in key dimensions of human development, was regarded as a surrogate of the quality of a country’s national health care system.

Results

We included 170 reports (1.054.364 patients) (Fig 1); 103 (882.734 patients) were from the indexed and 67 (171.630) from the non-indexed literature. Weighted mean of overall anaesthesia-related mortality was 8.03/10.000 (Fig 2); it was 5.45/10.000 in the indexed literature and was 21.27/10.000 in the non-indexed literature. There was a trend toward lower mortality rates in countries with higher Human Development Indexes (Fig 3).

Figure 1. Flow chart

Figure 2. Anaesthesia-related mortality rate. Indexed literature = medical databases (PubMed, Cochrane, Web of Science, Embase); non-indexed (grey) literature = African medical journals, African National Congresses on obstetrics and surgery, medial theses and Google. Data are weighted means.

Figure 3. Anaesthesia-related mortality rate per 10.000 anaesthetics. Each bubble represents the sum of reports of one country. Burkino Faso, Ethiopia and Mali are not shown since reported mortality rates were zero.

Conclusion

Anaesthesia-related mortality in Sub-Saharan African countries is higher than previously reported.¹ It remains unclear whether mortality is underestimated in the indexed literature or overestimated in the non-indexed literature. Countries with lower Human Development Indexes have higher mortality rates.

Reference

1. Bainbridge et al. Perioperative and anaesthetic-related mortality in developed and developing countries: a systematic review and meta-analysis. *Lancet* 2012;380:1075–81