INAHTA Briefs

Issue 2011/071

Title **Growth Monitoring for Short Stature: Update of a Systematic Review and Economic Model**

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Reference Volume 15.11. ISSN 1366-5278. www.hta.ac.uk/project/2230.asp

Aim

To compare different screening rules and/or referral cut-offs for identifying children with disorders of short stature. We updated a previous systematic review and economic model that addressed the same question.

Conclusions and results

The systematic review included 1 study. The study was not UK based, but had been identified in the brief as relevant to the UK setting. The study's authors examined the performance of several rules to determine sensitivity and specificity of referral for short stature in 4 patient groups and 3 reference groups in the Netherlands. They derived an algorithm for referral based on the optimal rules. No new studies were located that provided appropriate quality-of-life or utilities data for the economic model. The model was based on the previous assessment, which was updated to better reflect current clinical practice in the UK. We compared 2 alternative monitoring strategies – one based on the study identified in our systematic review (Grote strategy) and the other based on UK consensus (UK strategy). We identified that the UK strategy was the least effective and least costly, with a mean gain of 0.001 QALYs at a mean cost of 21 pounds sterling (GBP). The Grote strategy was both more expensive and more effective, with a mean cost of GBP 68 and a mean QALY gain of 0.042. The incremental cost-effectiveness ratio was GBP 1144 per QALY gained. This assessment contributes further knowledge, but does not provide definitive answers on how to monitor growth. Considerable variation and uncertainty remains around current growth screening practices in the UK. We were unable to evaluate (through the use of identified studies and modeling) an optimal referral cut-off and age at which to screen. We identified several research questions that would further inform referral strategies, which would involve further primary and secondary data collection.

Recommendations

See Executive Summary www.hta.ac.uk/project/2230.asp.

Methods

We undertook a systematic review to identify studies that compared growth monitoring/screening strategies. This review updates our previous assessment – Fayter D, et al. A systematic review of the routine monitoring of growth in children of primary school age to identify growth-related conditions. Health Technol Assess 2007;11(22). Our search covered a range of databases from January 2005 to November 2009 with no language or publication restrictions. As part of our search strategy, we aimed to identify new studies containing quality-of-life/utilities data to use in the economic model. Two reviewers examined full papers for relevance. One reviewer extracted data and one checked the data, and authors were contacted for supplementary information where required. We summarized the results narratively. We developed a probabilistic decision analytic model to estimate the costs and quality-adjusted life-year (QALY) gains. The model adopted the perspective of the UK NHS and personal social services. The price year was 2009, and we used an annual discount rate of 3.5%. The model was a cohort model, assuming a homogeneous population of 5-year-olds at baseline.

Further research/reviews required

See Executive Summary www.hta.ac.uk/project/2230.asp.

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