Cost-Effectiveness of Long-Acting Methylphenidate for Treatment of Attention-Deficit/Hyperactivity Disorder (ADHD) in Children and Adolescents in Finland: An Evaluation based upon a Randomized Clinical Trial (RCT)

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Objective: To evaluate the cost-effectiveness of methylphenidate (MPH)-OROS, a long-acting formulation given once daily (o.a.d.), compared to short-acting MPH (immediate-release, IR), which requires twice (b.i.d.) or thrice (t.i.d.) daily administration schedules, from a payer's perspective in Finland.

Methods: Health care resource utilization was estimated based on the Canadian ADHD RCT by Steele et al. (2006), comparing MPH-OROS (average dose at study end, 37.8mg/d; n=70) with usual care using MPH-IR (n=73; hereof, 61% t.i.d., 34.6mg/d; 39%, b.i.d., 31.4mg/d) in an open-label 'pragmatic' parallel-group design over eight weeks. For costing, these data were combined with Finnish unit costs. Effectiveness was defined as intent-to-treat remission rates as determined by parent ratings (primary study endpoint: 18-item SNAP-IV scale). For an estimation of QALYs gained, utility scores for responders and nonresponders were derived from UK expert estimates and parent-proxy-ratings. Incremental cost-effectiveness ratios (ICERs) were calculated including a range of scenarios for maintenance treatment over an additional 12 months, and were subjected to multiple sensitivity analyses.

Results: Eight-week remission rates were 4% (MPH b.i.d.), 23% (MPH-IR t.i.d.), and 47% (MPH-OROS). For cost per response achieved, ICERs were €388 for MPH-OROS versus MPH-IR t.i.d. and €206 versus MPH-IR b.i.d.; ICERs for maintenance of response over 14 (2+12) months were €2,773 for MPH-OROS versus MPH-IR t.i.d. and €2,224 versus MPH-IR b.i.d., assuming that nonresponders discontinue drug treatment. Cost-per-QALY-gained for MPH-OROS versus MPH-IR t.i.d. was between €16,500 and €44,000, or €11,200 to €26,200 after adjustment for the Finnish 42% medication refund policy. Across all sensitivity analyses, MPH-OROS showed extended dominance over MPH-IR t.i.d. when compared to a Do Nothing scenario.

Conclusions: By current standards, ICERs for MPH-OROS appear to fall well within the limits considered acceptable, especially considering the limited scope of the analysis (patient symptom improvement only, without taking into account long-term sequelae or impact on caregivers).

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