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## Incremental Cost-Effectiveness Ratios of Clinically Proven Treatments for Attention-Deficit/Hyperactivity Disorder (ADHD): Impact of Diagnostic Criteria and Comorbidity

**Rationale:** ADHD is associated with a significant economic burden. A primary cost-effectiveness analysis based upon the MTA study (Jensen et al. 2004) indicated cost-effectiveness of intense medication management (MM) compared to routine community care (CC) while yielding inconclusive results for behavioral treatment (BEH) and the two combined (COMB). Diagnostic criteria (“hyperkinetic disorder” [HKD] according to ICD-10 vs. “ADHD”/DSM-IV) and comorbidity are known moderators of clinical treatment response.

**Objective:** to assess the impact of diagnostic criteria and comorbidity on the cost-effectiveness of the major proven forms of ADHD treatments based on the MTA Study, and to estimate their cost-utility.

**Methods:** In the MTA study, 579 children ages 7-10 with ADHD, combined type, were assigned to 14 months of MM, BEH, COMB, or CC. Treatment success was evaluated according to normalization rates being defined by a rating of less than 1 on the SNAP-IV scale capturing teacher and parent ratings (Swanson et al., 2001): (1) for the whole study population (with ADHD according to DSM-IV criteria), (2) for subpopulations with ADHD only (n=184), ADHD and internalizing (n=142), externalizing (n=172), or both comorbidities (n=81), (3) for the subgroup with ADHD meeting the stricter ICD-10 criteria (“HKD”, n=145). Direct costs were determined as follows: resource utilization data came from the MTA excluding the research component of the study. Unit costs were calculated from the U.S. societal perspective, adjusted to year 2000 dollars using the consumer price index (CPI). Utility gains were estimated using data reported in two analyses of health-related quality of life in ADHD from the UK: Coghill et al. 2004 (base case, measured in children using the EQ-5D) and Lord & Paisley 2000 (best case, expert estimates based on the EQ-5D).

**Results:** (1) DSM-IV (overall): MM vs. CC: US-\$ 352 / patient normalized (“patnorm.”), \$5,500 (best case: \$3,009)/QALY gained; COMB vs. MM. \$55,392/patnorm., \$865,500 (best case: \$473,436)/QALY; BEH was dominated by MM. (2) In patients with internalizing or both comorbidities, MM was relatively less cost-effective (vs. CC: \$1,000/patnorm. or \$15,625 [best case: \$8,547]/QALY), whereas BEH fared relatively better. (3) ICD-10 (HKD): MM vs. CC \$124/patnorm. or \$ 1,061-1,940/QALY; BEH was again dominated by MM; COMB vs. MM: \$31,445/patnorm. or \$268,757-491,322/QALY. Probabilistic sensitivity analyses and cost-effectiveness acceptability curves were calculated, largely supporting the findings above.

Discussion: Based upon the MTA study, MM appears to be cost-effective compared to CC for routine treatment of children with ADHD, dominating the BEH strategy. This observation holds for all subgroups analyzed. Given the design of the analysis, the cost-effectiveness estimates for the BEH and COMB strategies should be interpreted with caution.

Disclosure information:

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