Regulatory action and moderate decrease in methylphenidate use among ADHD diagnosed patients aged five and under in Korea

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Regulatory Toxicology and Pharmacology (May 2015)
DOI: http://dx.doi.org/10.1016/j.yrtph.2015.04.022.

Abstract
In December 2009, Korean regulatory agency announced that methylphenidate, a drug used to treat attention deficit-hyperactivity disorder (ADHD), should not be used in children aged five and under due to the risk of sudden cardiac death. This study examined the impact of regulatory action and prescribing patterns. We conducted a time series analysis using the Korea National Health Insurance Service database. Study subjects included children under 18 years old with ADHD from January 2007 to December 2011. Contraindicated use of methylphenidate was defined as use of methylphenidate at least once in children aged five and under. We selected additional control points (2007, 2008, and 2010) and compared the methylphenidate use one year before and after each point. We calculated relative and absolute reductions, and 95% confidence intervals. The total number of ADHD patients was 376,298. Overall, there was a 70.87% relative reduction (95% CI: 63.33%–79.31%) and a 0.93% absolute reduction (95% CI: 0.51%–0.60%) of methylphenidate use. The relative and absolute reductions were 27.61% (95% CI: 24.76%–30.78%) and 0.31% (95% CI: 0.21%–0.41%) in 2007; 43.58% (95% CI: 38.02%–49.96%) and 0.35% (95% CI: 0.27%–0.43%) in 2008; 46.52% (95% CI: 38.86%–55.70%) and 0.21 (95% CI: 0.15%–0.27%) in 2009; and 10.20% (95% CI: 8.32%–12.50%) and 0.02% (95% CI: 0.02%–0.07%) in 2010. Korean regulatory action led to a moderate decrease in contraindicated methylphenidate use even after the steep decline before the regulatory action.