Changing Patterns of Alpha Agonist Medication Use in Children and Adolescents 2009-2011

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OBJECTIVES: The purpose of this study was to describe rates and patterns of long- and short-acting alpha agonist use for behavioral problems in a primary care population following Food and Drug Administration (FDA) approval of the long-acting alpha agonists guanfacine and clonidine.

METHODS: Children and adolescents 4-18 years of age, who received an alpha agonist prescription between 2009 and 2011, were identified from a sample of 45 United States primary care practices in two electronic health record-based research networks. Alpha agonist receipt was identified using National Drug Codes and medication names. The proportion of subjects receiving long- and short-acting prescriptions in each year was calculated and examined with respect to reported mental health diagnoses, and whether indications for use were on-label, had evidence from clinical trials, or had no trial evidence.

RESULTS: In a cohort of 282,875 subjects, 27,671 (10%) received any psychotropic medication and only 4,227 subjects (1.5%) received at least one prescription for an alpha agonist, most commonly a short-acting formulation (83%). Only 20% of alpha agonist use was on-label (use of long-acting formulations for attention-deficit/hyperactivity disorder [ADHD]). Most subjects (68%) received alpha agonists for indications with evidence of efficacy from clinical trials but no FDA approval, primarily short-acting formulations for ADHD and autism; 12% received alpha agonists for diagnoses lacking randomized clinical trial evidence in children, including sleep disorders and anxiety, or for which there was no documented mental health diagnosis. Rates of long-acting alpha agonist use increased more than 20-fold from 0.2% to 4%, whereas rates of short-acting alpha agonist use grew only slightly between 2009 and 2011 from 10.6% to 11.3%.

CONCLUSIONS: Alpha agonist use was uncommon in this population, and most subjects received short-acting forms for conditions that were off-label, but with clinical trial evidence. The safety and efficacy of use for conditions, including sleep disorders and anxiety, lacking evidence from randomized trials, warrant further investigation.

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