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SHORT-COURSE ORAL CORTICOSTEROID TOXICITY IN CHILDRENFahad Aljebab, Imti Choonara, Sharon Conroy. *University of Nottingham*

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Background Multiple studies have evaluated and reported adverse drug reactions (ADRs) of corticosteroids. Short course oral corticosteroids are commonly used in children in the management of conditions such as asthma exacerbations. This systematic review aimed to identify the most common and serious ADRs associated with short courses of oral corticosteroids and to determine their relative risk levels in children.

Methods A literature search of several databases; Embase, Medline, International Pharmaceutical Abstracts, CINAHL, the Cochrane Library and PubMed was performed to identify all studies where corticosteroids had been administered to paediatric patients ranging from 28 days to 18 years of age for up to and including 14 days of treatment. Each database was searched from their earliest dates to December 2013. All types of studies that provided clear information on adverse events were included with no language restrictions. Quality assessments were performed on all studies by two independent reviewers.

Results Thirty eight studies met the inclusion criteria. These studies represented 3202 children and contained reports of 847 adverse events. The three most frequent ADRs were vomiting, increased blood pressure and behavioural changes. The incidence rates of these three ADRs were 6.3%, 8.5% and 4.8%, of patients respectively. The risk of vomiting was greater with oral prednisolone than oral dexamethasone with a relative risk of 3.62 (95% CI 1.89, 6.95; $P=0.0001$, $I^2=30\%$). Prednisolone sodium phosphate was reported to cause vomiting less frequently than other prednisolone dosage forms ($P=0.047$). HPA axis suppression was detected in 43 of 53 patients who were tested. The relative risk of oral prednisolone to cause HPA axis suppression compared with inhaled steroids was 9.95 (95% CI 1.73, 53.03; $P=0.010$, $I^2=54\%$). Increased susceptibility to infection was one of the most serious ADRs, one child died after contracting a varicella zoster infection.

Conclusions Vomiting, increased blood pressure and behavioural changes were the most frequent ADRs seen when short-course oral corticosteroids were given to children. In addition, increased susceptibility to infection was the most serious ADR. The majority of children who received short course oral corticosteroids will experience HPA axis suppression.