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Induction Dose of Propofol in Infants and Children

To the Editor:—We read with interest the recent report by Westrin[1] assessing the required dose of propofol for satisfactory induction of anesthesia in infants and children. However, we believe that the study may have been biased by its methodology used and by the occurrence of spontaneous movements, a side effect commonly observed during induction with propofol in children.[2] Indeed, the dose required for satisfactory induction in 50% of patients was assessed by the "up and down method" and judged adequate or inadequate if children moved in response to the anesthesia mask 30 s after injection.

As we recently demonstrated,[3] however, spontaneous movements in children given a bolus of propofol 3 $mg \cdot kg^{-1}$ occurred between 25 and 30 s and lasted until 60–80 s after the induction dose. EEG recordings obtained during this period showed that these spontaneous movements were related to the phase of δ-wave appearance. Although the nonprocessed EEG does not permit accurate quantification of the depth of anesthesia, the appearance of δ waves showed that the excitement stage had been passed.[4] Since 41% of the children moved in response to the anesthesia mask (after loss of the lid reflex) at a time coincident with the appearance of spontaneous movements—a phenomenon not related to inadequate anesthesia—the results obtained by Westrin should be interpreted with caution since the methodology used in this trial does not permit differentiation between inadequate anesthesia or spontaneous movements. EEG and/or analysis of evoked patients seem to be more suitable methods to answer these questions.

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In Reply: I thank Dr. Borgeat, Dr. Wilder-Smith, and Dr. Tassonyi for their interest. Their point is well taken. However, I believe that analysis of movements in response to the anesthesia mask was indeed a valid way of assessing the adequacy of anesthesia, and I am uncertain whether the alternative suggested by Borgeat and collegues would really be more suitable.

I tested the response 30 s after the injection and required major movements of the arms, legs, head, or trunk in order to classify the patient as not asleep.[1] Spontaneous movements occurring after propofol, and apparently not associated with inadequate sleep, have been described as minor.[2,3] They have been stated to appear a few seconds after completion of the injection and to last no longer than 25 s,[3] the most recent report by Borgeat *et al.* excluded.[4] The incidence of spontaneous movements reported by Borgeat *et al.* is high (75–100%)[3,4] in comparison to that found by others. Purcell-Jones *et al.*[2] reported an incidence of 33%, and Mirakhur,[5] who compared the induction characteristics of propofol to those of thiopental, reported spontaneous movements in 22 and 23% of patients, respectively. Apart from these