currently on medication. Treatment of ADHD involves not only medication, but also behavior therapy and a combination of both types of therapy (3). The American Academy of Pediatrics' Committee on Quality Improvement, Subcommittee on ADHD (3) reported that behavior therapy alone has only limited effects on the symptoms or functioning of children with ADHD; however, medication in combination with behavior therapy was shown to be as beneficial as drug treatment alone, and this combined modality may lower the drug doses needed to achieve the same therapeutic benefits obtained with drug treatment alone. The authors did not mention the rates of behavior therapy alone or combination therapy in this study. Although behavior therapy alone may not provide a significant effect on the behaviors of children with ADHD, if behavior therapy and combined therapy were taken into account in the demographic data and were involved in the statistical analysis, this study could provide additional useful information for the perioperative management of children with ADHD.

In this study, the authors demonstrated that children with ADHD were significantly more uncooperative during induction of anesthesia than those in the control group. Lee *et al.* (4) recently reported that children with ADHD who showed an increased salivary cortisol level after psychologic testing (used as a stressor) displayed a higher variability in response time than children with no change or a decreased cortisol level, and the result of this study suggested that a stress-induced increase in cortisol level might be associated with poor attention performance in children with ADHD. Although it remains controversial whether the uncooperative behaviors of children with ADHD upon induction of anesthesia are really specific to ADHD, increased salivary cortisol level may partly contribute to the uncooperative behaviors of ADHD children, because induction of anesthesia must be a psychologically stressful experience for them.

I agree with the authors' opinion that parents of children with ADHD were more sensitive to their child's behaviors and therefore more likely to over-report behaviors than parents of children without ADHD. Soma *et al.* (5) recently demonstrated that, compared with teachers, parents consider their children's symptoms to be much more serious, and there was a large discrepancy in the prevalence of ADHD symptoms in preschool children based on evaluation by parents or teachers. These authors also mentioned that the results of their teacher survey might be more reflective of the true level than those from the parent survey. Therefore, although the Post-Hospital Behavior Questionnaire (PHBQ) is a widely used self-report questionnaire for parents, if the PHBQ was performed with some modifications, not only by parents but also by teachers, more objective findings of postoperative behavior might be gained in children with ADHD.

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Response to: comments on attention-deficit/hyperactivity disorders and anesthesia

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Sir—We thank Dr. Kira for his interest and comments regarding our study of children with ADHD who underwent anesthesia (1). Our rationale for including children between the ages of 4 and 17 was largely due to the exploratory nature of our study. Given that there were no previous prospective studies examining this issue, we believed it important to examine behaviors among children over a wide age range but we concur with Dr. Kira that focus on a narrower age group may be more definitive.

We agree that treatment for ADHD typically involves a multifaceted approach involving both medication and behavioral therapy; however, data on the possible impact of behavioral therapies on perioperative outcomes among children with ADHD were beyond the scope of our study. Dr. Kira does, however, raise an important point which may serve as a basis for future studies.

While it is well known that anesthesia and surgery are stressful event for any child, it is unclear why children

with ADHD appeared to adapt less well compared with children without ADHD. As Dr. Kira points out, while increased salivary cortisol levels may well contribute to the uncooperative induction behavior of children with ADHD, the observation by Blomqvist *et al.* (2) that children with ADHD undergoing dental procedures have lower cortisol levels compared with children without ADHD yet are harder to manage 'muddies the waters' somewhat. As our hypothesis did not include the role of cortisol levels in the expression of perioperative behaviors in children with and without ADHD, we can only conclude that the observed differential response to the stress of anesthesia and surgery is likely multifactorial and, as such, perhaps an interesting platform for future research.

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Incidence of complications associated with rapid sequence induction (RSI) in children – it is a matter of age and technique

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Sir—We read with interest the recent article by Gencorelli and coworkers (1) on their retrospective evaluation of complications of rapid sequence induction (RSI) in 1070 children aged 3–12. The analysis of electronic anesthetic records seems to be a promising approach to evaluate the respiratory and hemodynamic implications of RSI that constitutes a clinically relevant issue in pediatric anesthesia, emergency, and critical care medicine.

However, in our view two major concerns need to be addressed: (i) The authors state that there was no explicit institutional protocol for the RSI in children. One of the authors (R.S.L.) states in his textbook that mask ventilation is required when hypoxemia develops (modified RSI) (2) but for this study it remains unclear in which and in how many children transient mask ventilation had been performed prior to intubation. (ii) The study did not include children below 3 years of age; though, this age group is known to be at a particular risk for the development of complications related to *classic* RSI that includes administration of succinylcholine, prolonged apnea, and no transient mask ventilation (3). Notwithstanding, the incidence of complications reported (including difficult intubation) appears to be remarkably high (3,4).

Both, clinical observation and physiological data show that neonates and infants develop hypoxemia ($SpO_2 < 90\%$) before full neuromuscular blockade is accomplished (5). This rapid desaturation may be even more dramatic in critically ill or injured children. Thus, when using the *classic* RSI technique, rapidity to save time, results in haste and subsequent mental stress that frequently trigger further complications such as intubation difficulties and forced mask ventilation. (6,7). In this study, the relatively high incidence of difficult intubation, hypoxemia, and bradycardia in otherwise healthy children may reflect the primarily use of a *classic* RSI technique itself.

In contrast, a *controlled* RSI technique based on regular gentle mask ventilation with a maximum inspiratory pressure of 10–12 cm H_2O (as regulated by the airway pressure valve or by PCV mode) is sufficient to provide adequate oxygenation but is unlikely to cause gastric inflation (8). Weighing the risk of gastric regurgitation and pulmonary aspiration (mainly caused by inadequate depth of anesthesia and muscle paralysis (9) against the much more prevalent risk of hypoxemia, the *controlled* RSI technique has become increasingly accepted and recommended for the vast majority of children with full stomach by many pediatric anesthetists and professional bodies, including the Scientific Working Group for Paediatric Anaesthesia of the German Society of Anaesthesiology and Intensive Care Medicine with its 2007 Practice Guidelines on RSI (10).

Overall, we appreciate the extensive analysis performed by Gencorelli and coworkers that demonstrates that a *classic* RSI technique without transient mask ventilation is not a reliable approach to minimize the incidence of complications associated with the induction of anesthesia in children with a full stomach.

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