

## Summary

### **Haemostasis testing in children before ear-nose-throat surgery**

**Introduction:** Haemorrhagic complications in association with adenoidectomy and tonsillectomy are still a significant medical problem, despite development of surgical procedures and technology. The purpose of the preoperative coagulation tests is to identify patients with a bleeding disorder and therefore with a higher risk of bleeding. There is ongoing discussion about the most effective preoperative screening before ear-nose-throat surgery. The main aims of this study are: to find out the occurrence of abnormal preoperative coagulation test results in paediatric patients before adenoidectomy and tonsillectomy, as well as to identify the most frequent causes of prolonged coagulation tests and to evaluate the influence of coagulation screening for further perioperative management.

**Patients and methods:** Two cohorts of patients were evaluated. Cohort I.: In this prospective study coagulation tests were performed in children before adenoidectomy and tonsillectomy. A questionnaire was used for asking parents about the personal and family history of bleeding symptoms. The occurrence of abnormal preoperative coagulation tests was evaluated, as well as the relationship to the peri/postoperative bleeding complications. Moreover a cohort of patients was analysed, who were referred to the outpatient haematology clinic for abnormal preoperative coagulation tests – cohort II.. The causes of abnormal coagulation tests and the value of coagulation screening for perioperative management were evaluated.

**Results:** Cohort I.: Six patients out of 106 (5,7%) had prolonged aPTT, when compared with reference range according to age, and two patients (1,9%) had prolonged PT. No bleeding disorder was diagnosed in these patients and no bleeding complication occurred in association with the surgery. Cohort II.: A total of 274 patients were tested in the paediatric haematology clinics of two university hospitals for abnormal preoperative coagulation results. The prolongation of aPTT / PT was transient in 140 of 274 children (51,1%) and resolved spontaneously by repeated testing. Ninety-nine patients of the 124 (79.8%) children tested for factor deficiency had all investigated coagulation factor activities within the normal ranges. Two patients with a bleeding disorder (von Willebrand disease and factor VII deficiency) were diagnosed by repeated factor testing. Both of these patients had positive personal or family bleeding history. All of the patients with factor deficiency have been on supportive pro-haemostatic or antifibrinolytic treatment perioperatively. The course of surgery was without bleeding complications and with no need for factor replacement therapy.

**Conclusion:** The prolongation of aPTT and PT in preoperative screening is most frequently

caused by clinically irrelevant reasons. The routine preoperative coagulation testing has a low effectivity for selecting patients with a bleeding disorder. Our findings provide more evidence, that thorough family and personal bleeding history should be sufficient in the preoperative screening. Coagulation testing should be performed only in justified cases.