

## Publication

## Predicting adverse events in children with fever and chemotherapy-induced neutropenia : the prospective multicenter SPOG 2003 FN study

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1192815**Author(s)** Ammann, Roland A; Bodmer, Nicole; Hirt, Andreas; Niggli, Felix K; Nadal, David; Simon, Arne; Ozsahin, Hulya; Kontny, Udo; Kühne, Thomas; Popovic, Maja Beck; Lüthy, Annette Ridolfi; Aebi, Christoph**Author(s) at UniBasel** [Kühne, Thomas](#) ;**Year** 2010**Title** Predicting adverse events in children with fever and chemotherapy-induced neutropenia : the prospective multicenter SPOG 2003 FN study**Journal** Journal of clinical oncology**Volume** 28**Number** 12**Pages / Article-Number** 2008-14

**PURPOSE** To develop a score predicting the risk of adverse events (AEs) in pediatric patients with cancer who experience fever and neutropenia (FN) and to evaluate its performance. **PATIENTS AND METHODS** Pediatric patients with cancer presenting with FN induced by nonmyeloablative chemotherapy were observed in a prospective multicenter study. A score predicting the risk of future AEs (ie, serious medical complication, microbiologically defined infection, radiologically confirmed pneumonia) was developed from a multivariate mixed logistic regression model. Its cross-validated predictive performance was compared with that of published risk prediction rules. **Results** An AE was reported in 122 (29%) of 423 FN episodes. In 57 episodes (13%), the first AE was known only after reassessment after 8 to 24 hours of inpatient management. Predicting AE at reassessment was better than prediction at presentation with FN. A differential leukocyte count did not increase the predictive performance. The score predicting future AE in 358 episodes without known AE at reassessment used the following four variables: preceding chemotherapy more intensive than acute lymphoblastic leukemia maintenance (weight = 4), hemoglobin  $\geq 90$  g/L (weight = 5), leukocyte count less than 0.3 G/L (weight = 3), and platelet count less than 50 G/L (weight = 3). A score (sum of weights)  $\geq 9$  predicted future AEs. The cross-validated performance of this score exceeded the performance of published risk prediction rules. At an overall sensitivity of 92%, 35% of the episodes were classified as low risk, with a specificity of 45% and a negative predictive value of 93%. **CONCLUSION** This score, based on four routinely accessible characteristics, accurately identifies pediatric patients with cancer with FN at risk for AEs after reassessment.

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