The toxicity of very prolonged courses of PEGasparaginase or *Erwinia* asparaginase in relation to asparaginase activity, with a special focus on dyslipidemia

Wing H. Tong,¹ Rob Pieters,^{1,2} Hester A. de Groot-Kruseman,³ Wim C. J. Hop,⁴ Joachim Boos,⁵ Wim J. E. Tissing,⁶ and Inge M. van der Sluis¹

¹Department of Pediatric Oncology/Hematology, Erasmus MC-Sophia Children's Hospital, Rotterdam, the Netherlands; ²Princess Máxima Center for Pediatric Oncology, Utrecht, the Netherlands; ³Dutch Childhood Oncology Group, The Hague, the Netherlands; ⁴Department of Biostatistics, Erasmus MC-University Medical Center, Rotterdam, the Netherlands; ⁵Department of Pediatric Hematology/Oncology, University Children's Hospital, Münster, Germany; and ⁶Department of Pediatric Oncology and Hematology, University of Groningen, University Medical Center Groningen, Groningen, the Netherlands

©2014 Ferrata Storti Foundation. This is an open-access paper. doi:10.3324/haematol.2014.109413 Manuscript received on April 18, 2014. Manuscript accepted August 8, 2014. Correspondence: i.vandersluis@erasmusmc.nl

Supplemental file accompanying the paper

Toxicity of very prolonged PEGasparaginase and *Erwinia* asparaginase courses in relation to asparaginase activity levels with a special focus on dyslipidemia

Wing H. Tong ¹, Rob Pieters ^{1, 2}, Hester A. de Groot-Kruseman ³, Wim C. J. Hop ⁴, Joachim Boos ⁵, Wim J. E. Tissing ⁶, Inge M. van der Sluis ^{1,*}

Erasmus MC-Sophia Children's Hospital, Rotterdam, The Netherlands.

¹ Department of Pediatric Oncology/Hematology,

² Princess Máxima Center for Pediatric Oncology, Bilthoven, The Netherlands.

³ Dutch Childhood Oncology Group, The Hague, The Netherlands.

⁴ Department of Biostatistics, Erasmus MC-University Medical Center, Rotterdam, The Netherlands.

⁵ Department of Pediatric Hematology/Oncology, University Children's Hospital, Muenster, Germany.

⁶ Department of Pediatric Oncology and Hematology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.

^{*} Corresponding author.

Supplemental results

Toxicities (pancreatitis, thrombosis, central neurotoxicity)

To evaluate the relation between the parameters; asparaginase activity levels, triglyceride and ammonia levels after log-transformation and the incidence of toxicities (pancreatitis, thrombosis, central neurotoxicity), Cox-regression with time-dependent variables was used. Treatment with either PEGasparaginase or *Erwinia* asparaginase in case of an allergy to or silent inactivation of PEGasparaginase was taken into account by stratification in this analysis. No significant relations were found using time-dependent Cox-regression.

Legends to Supplemental Figures

Supplemental Figure 1

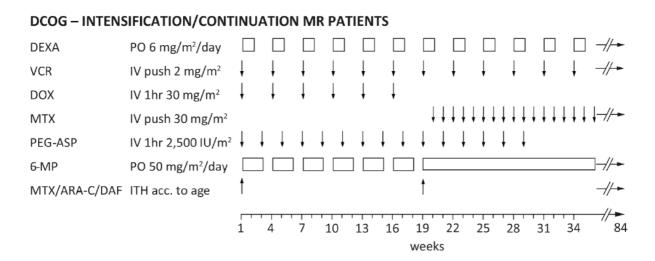
The intensification/continuation phase of the Dutch Childhood Oncology Group ALL-10 protocol (medium risk group, MRG).

Supplemental Figure 2

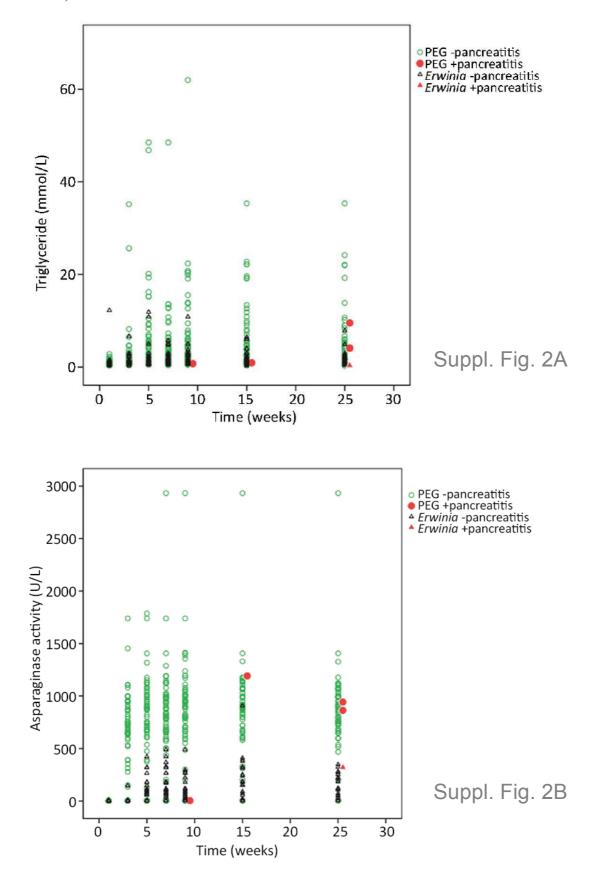
Incidence of toxicities (pancreatitis, thrombosis, central neurotoxicity) in relation to longitudinal parameters (asparaginase activity levels, triglyceride and ammonia levels). Panels A-B: pancreatitis; panels C-D: thrombosis; panels E-F: central neurotoxicity. The red dots and red triangles indicate the occurrence of toxicities using very prolonged PEGasparaginase or *Erwinia* asparaginase courses.

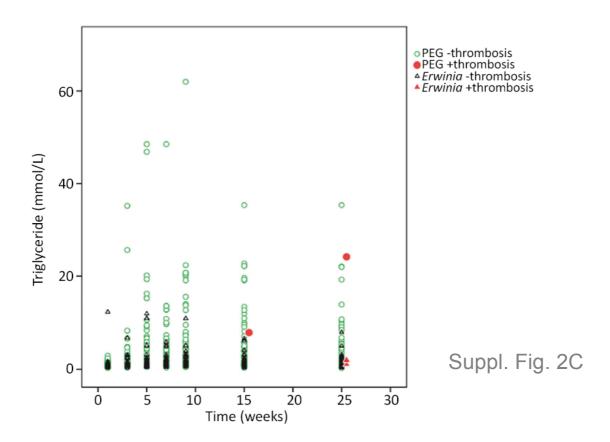
Please note that in Panels A-B one patient on *Erwinia* asparaginase with pancreatitis is not shown as this patient had not subsequent asparaginase activity level and/or triglyceride level at the moment of pancreatitis occurrence.

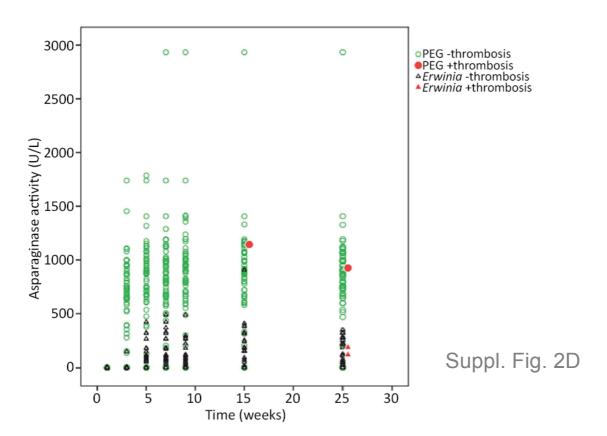
Supplemental Figure 1: DCOG ALL-10 medium risk intensification protocol.

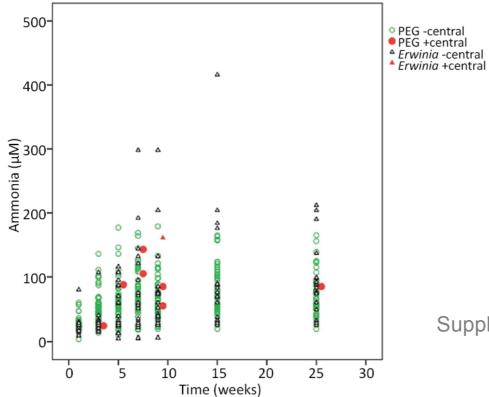


Supplemental Figure 2: Incidence of toxicities (pancreatitis, thrombosis, central neurotoxicty) in relation to longitudinal parameters (asparaginase activity levels, triglyceride and ammonia levels).

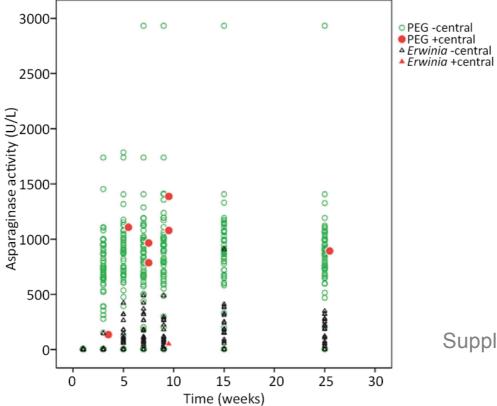








Suppl. Fig. 2E



Suppl. Fig. 2F