PO192

BLEEDING CONTROL IMPROVES AFTER SWITCHING TO EMICIZUMAB: REAL WORLD EXPERIENCE FROM 251 CHILDREN IN THE PEDNET REGISTRY

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Introduction: Despite the rapid uptake of emicizumab in the pediatric hemophilia A (HA) population, real-world data on emicizumab safety and efficacy outcomes in children remain limited. The aim of this study was to report on bleeding and safety in pediatric patients in a large prospective multicenter cohort study.

Methods: Data were extracted from the ongoing PedNet Registry (Clin.gov.trial: NCT02979119; extraction date: Jan 2022). Patients were included if they had a diagnosis of congenital HA (baseline FVIII up to 25%) and were <18 years old at start of emicizumab. Patients were required to have maintenance therapy of emicizumab and bleeding data available for ≥4 weeks. Patients with concomitant coagulopathies were excluded. Bleeding data were compared during emicizumab to data before emicizumab (to a maximum of 2 years prior to start of emicizumab). Patient characteristics were summarized as numbers (%) and median with IQR (P25-P75). Mean annualized bleeding and joint rates (A(J)BR) were estimated by negative binomial regression modelling.

Results: 251 patients were included. The median age at start with emicizumab therapy was 6.1 years (IQR: 2.1 – 12.0). Median follow-up time during emicizumab was 1.23 years (IQR: 0.74-1.90). The majority of patients had severe HA (94%), approximately one third had an inhibitor (37%) and 9% of the patients were previously untreated patients. The A(J)BR significantly improved during emicizumab therapy. In patients without inhibitors the mean ABR reduced from 2.8 (CI 2.3-3.4) prior to emicizumab to 1.0 (CI 0.8–0.3) during emicizumab, while the AJBR reduced from 0.8 (CI 0.7–1.0) to 0.3 (CI 0.2-0.4). Similar results were seen in patients with inhibitors, the mean ABR reduced from 5.5 (CI 4.4–7.0) to 1.1 (CI 0.6–1.0), while the AJBR reduced from 2.3 (CI 1.8–2.9) to 0.3 (CI 0.2–0.4).

In this cohort, 2 serious adverse and 6 adverse events were reported. Serious adverse events included one death unrelated to emicizumab therapy (retroperitoneal bleed in a baby treated with LMWH for CVL thrombosis) and one patient developed anti-drug antibodies without breakthrough bleeding. Adverse events were related to injection site reaction. No TMA or other thrombotic events were observed.

Discussion/Conclusion: This large cohort study showed improved bleeding control compared to previous therapy and a favorable safety profile during emicizumab treatment in pediatric patients.

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