

Comparison of bleeding rate and factor consumption between extended and short half-life factor VIII in real life according to electronic documentation smart medication™

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Background:

With the introduction of extended half-life factor VIII products (EHL) the annual bleeding rate (ABR), annual joint bleeding rate (AJBR) and factor consumption (FC) as well as the prophylactic treatment schedule may change in comparison to previous treatment with short half-life factor VIII (SHL).

Methods:

Annual joint bleeding rate (AJBR) and factor VIII consumption were compared between patients receiving EHL and SHL during a one-year period (08/2018 – 08/2019). Two groups were compared: The EHL-group receiving only EHL factor VIII and the SHL-group, receiving mostly SHL but switched to EHL (≥ 12 weeks on EHL).

Results:

74 patients with severe hemophilia A out of the smart medication™ cohort were treated with EHL concentrates with a total number of 7182 entries between 8/2018 and 8/2019 in their electronic diary (25 Adynovi, 44 Elocta, 4 Jivi). 10 patients were excluded because of incomplete entries. To better compare bleeding rates only joint bleeds were included. Data from 64 patients were finally analyzed: EHL-group 27 and SHL-group 37. The schedule of prophylaxis was 2,14 treatments per week in the EHL and 2,83 treatments per week in the SHL group ($p < 0.05$). Weekly factor consumption (IE/kg KG) was 73 in the EHL and 76 in the SHL group. The annual joint bleeding rate was 1.13 in the EHL and 1.97 in the SHL group (n. s.). Relation of factor consumption (%) between prophylaxis vs. bleeding + follow-up was 95/5 in the EHL and 86/14 in the SHL group (n.s.).

Summary:

In order to compare similar patients, two groups were formed retrospectively: Those receiving only EHL and others who switched from SHL to EHL concentrates, the latter therefor eligible for EHL treatment. Patients on EHL documented an approximately twice weekly prophylaxis, compared to nearly three times weekly schedule with SHL. The total weekly consumption was however similar in both groups (only slightly lower in the EHL group). Obviously, the switch from EHL to SHL results in less frequent but initially higher single dose prophylaxis in the EHL compare to the SHL group. AJBR was lower in the EHL group, leading to a reduced consumption for bleeds vs. prophylaxis in the EHL vs. the SHL group. Most likely due to small sample size, the difference of AJBR was not significant. However, less frequent prophylaxis and reduced bleeding rates with EHL vs. SHL products indicate improved hemophilia care by using EHL products. Ongoing real-life analysis comparing SHL vs. EHL are required.

