Long-term experience with biologic therapies for the treatment of polyarticular juvenile idiopathic arthritis

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The introduction of biological therapies opened a new era for the treatment of polyarticular juvenile idiopathic arthritis. Remission of disease is now a goal well within reach for many patients. It is now more than a decade since the first biologics for treatment of pediatric rheumatic disease were approved. Long-term effects regarding safety and efficacy are of great interest and these data are now available. This review summarizes published extension studies of biologic therapies, as well as published literature from national biologic registries in juvenile idiopathic arthritis patients. The take-home message of this review is that, especially in the case of etanercept, data show long-lasting efficacy with high adherence rates to the treatment. Tolerability appears to be good over 1-year-long treatment, with no relevant rise in medically relevant infections and yet no obvious association with malignancies. For other biologics, long-term data are relatively scarce.

Keywords: abatacept • adalimumab • etanercept • infliximab • juvenile idiopathic arthritis • TNF-α-inhibitors • tocilizumab • safety

Ariane Klein* & Gerd Horneff

Centre for Paediatric Rheumatology, Department of Paediatrics, Arnold-Janssen-Str. 29, 53757 Sankt Augustin, Germany
*Author for correspondence:
Tel.: +49 2241 240 201
Fax: +49 2241 249 203
E-mail: ar.klein@asklepios.com

With the beginning of this millennium, pharmacotherapy of juvenile idiopathic arthritis (JIA) has changed dramatically due to the introduction of biologics. The goal of inactive disease and remission of JIA is now within reach for the majority of patients [1,2]. Many promising new biologic agents have been established and licensed over the last years – and there are more to come.

Biologics, which initially were licensed for single diagnoses only, are now available for a broader spectrum of JIA categories [3]. Thus, the number of patients treated with biologic agents has multiplied. Therefore, data for long-term efficacy and safety are now available and of great importance, especially late-occurring adverse events (AEs) such as malignancies ,are of interest [3–5].

Extension studies of original clinical trials and national registries are able to provide data to evaluate long-term effects of biological therapies. While extension studies mostly have a prospective design, the long-term follow up cannot be placebo-controlled for ethical reasons. The patient numbers tend to be relatively small and decrease over time, so analysis of rare AEs is often underpowered [6–9].

Registries are capable of providing large numbers of patients, but treatment decisions do not follow a uniform protocol and data have to be analyzed retrospectively [10–15]. This review aims to give an overview of the long-term follow-up data on biologic therapies for JIA.

TNF inhibitors

☑ Etanercept

Etanercept (Enbrel®) is a TNF receptor immunoglobulin fusion protein, binding with high affinity to both TNF-α and -β. Etanercept is administered

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