adimilumab (Humira®) and plaque psoriasis in children

No better than other immunosuppressants

In a trial in 114 children, the efficacy of adalimumab was not notably different from that of methotrexate, and its adverse effects profile did not appear to be more favourable.

Treatment of children with plaque psoriasis is based mainly on topical drugs, starting with emollients or possibly topical corticosteroids, or vitamin D derivatives. A short course of UVB phototherapy is an option for children with extensive or refractory psoriasis. Systemic immunosuppressive therapy should only be considered in very severe cases, because of its adverse effects and its limited evaluation in children. Methotrexate has long been used to treat other disorders in children, but this immunosuppressant carries a risk of infections, haematological disorders, liver injury and cancer. The harm-benefit balance of etanercept, a TNF-alpha antagonist, is uncertain in children with psoriasis.

Adalimumab (Humira®, Abbvie), another TNF-alpha antagonist authorised for the treatment of various paediatric disorders, has been approved for use in children with severe plaque psoriasis in whom local treatment or phototherapy has failed.

What is the harm-benefit balance of adalimumab in this setting?

About 50% of children improved, but frequent relapses after treatment discontinuation. Clinical evaluation of adalimumab in children with plaque psoriasis is mainly based on a randomised, double-blind trial versus methotrexate in 114 patients aged 4 to 17 years, 97 of whom were over 8 years old. Very few of the children had severe psoriasis, based on criteria taking into account the character and extent of lesions. All children had already received a local treatment, one-half had received phototherapy, and one-third had received a systemic treatment (10% with etanercept) (4). After randomisation, the children received adalimumab 0.4 mg/kg, adalimumab 0.8 mg/kg (the approved dosage), or methotrexate at a maximum dose of 0.4 mg/kg per week.

After 16 weeks, a marked reduction in the extent and severity of the lesions was observed in 58% of the 38 children who received adalimumab 0.8 mg/kg versus 32% of those who received methotrexate (p=0.027). The lesions disappeared or were considered “minimal” in about half of children, with no statistically significant difference between the groups (4).

At the end of treatment, psoriasis worsened in 83% of the children who received adalimumab 0.8 mg/kg versus 69% of those in the methotrexate group (4).

Infections, including herpes zoster and tuberculosis. Adalimumab has a burdensome adverse effect profile, including infections, hypersensitivity reactions, injection site reactions, haematological disorders, liver injury, and cancer (including some very aggressive lymphomas) (5,6).

In the paediatric trial, about one-quarter of the children developed infections possibly related to the treatment, with no difference between the groups (4). Three children in the adalimumab groups developed herpes zoster, and two had primary tuberculosis (4). Psoriasis worsened markedly in two children receiving adalimumab and in none of those treated with methotrexate (4). No cancers were reported during the trial, but follow-up was short (4).

Ten children in the adalimumab groups developed antibodies to adalimumab. The efficacy of adalimumab 0.8 mg/kg did not appear to be affected by the presence of these antibodies, but the number of patients was too small to reach firm conclusions (4).

In practice. Adalimumab has mainly been evaluated in children with moderate psoriasis. Overall, compared to methotrexate, adalimumab seemed slightly more effective on psoriatic lesions, but relapses after treatment withdrawal were more frequent. Because of its potentially serious adverse effects, including a risk of infections and cancer, adalimumab, like other immunosuppressants, should only be considered for children with very debilitating plaque psoriasis.