Nintedanib in children and adolescents with fibrosing interstitial lung diseases

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Shareable abstract (@ERSpublications)
The results of the randomised placebo-controlled InPedILD trial support a positive benefit–risk assessment for use of nintedanib in children and adolescents with fibrosing ILD https://bit.ly/3qnAhUM

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Abstract

Background Childhood interstitial lung disease (ILD) comprises a spectrum of rare ILDs affecting infants, children and adolescents. Nintedanib is a licensed treatment for pulmonary fibrosis in adults. The primary objectives of the InPedILD trial were to determine the dose-exposure and safety of nintedanib in children and adolescents with fibrosing ILD.

Methods Patients aged 6–17 years with fibrosing ILD on high-resolution computed tomography and clinically significant disease were randomised 2:1 to receive nintedanib or placebo for 24 weeks and then open-label nintedanib. Dosing was based on weight-dependent allometric scaling. Co-primary end-points were the area under the plasma concentration–time curve at steady state ($AUC_{\tau,ss}$) at weeks 2 and 26 and the proportion of patients with treatment-emergent adverse events at week 24.

Results 26 patients received nintedanib and 13 patients received placebo. The geometric mean (geometric coefficient of variation) $AUC_{\tau,ss}$ for nintedanib was 175 $\mu g \cdot h \cdot L^{-1}$ (85.1%) in patients aged 6–11 years and 167 $\mu g \cdot h \cdot L^{-1}$ (83.6%) in patients aged 12–17 years. In the double-blind period, adverse events were reported in 84.6% of patients in each treatment group. Two patients discontinued nintedanib due to adverse events. Diarrhoea was reported in 38.5% and 15.4% of the nintedanib and placebo groups, respectively. Adjusted mean±SE changes in percentage predicted forced vital capacity at week 24 were 0.3±1.3% in the nintedanib group and −0.9±1.8% in the placebo group.

Conclusions In children and adolescents with fibrosing ILD, a weight-based dosing regimen resulted in exposure to nintedanib similar to adults and an acceptable safety profile. These data provide a scientific basis for the use of nintedanib in this patient population.

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