Safety and Efficacy of AK0529 in Respiratory Syncytial Virus-Infected Infant Patients: a Phase 2 Proof-of-Concept Trial

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Abstract

Background. Respiratory syncytial virus (RSV) infection is a cause of substantial morbidity and mortality in young children. There is currently no effective therapy available. Methods. This was a phase 2 study of the oral RSV fusion protein inhibitor AK0529 in infants aged 1-24 months, hospitalized with RSV infection. In part 1 patients (n=24) were randomized 2:1 to receive a single dose of AK0529 up to 4 mg/kg or placebo. In part 2 patients (n=48) were randomized 2:1 to receive AK0529 at 0.5, 1 or 2 mg/kg bid or placebo for five days. Sparse pharmacokinetic samples were assessed using population pharmacokinetics modelling. Safety, tolerability, viral load, signs and symptoms were assessed daily during treatment. Results. No safety or tolerability signals were detected for AK0529: grade [?]3 treatment-emergent adverse events occurred in 4.1% of patients in AK0529 and 4.2% in placebo groups, respectively, and none led to death or withdrawal from the study. In part 2, targeted drug exposure was reached with 2 mg/kg bid. A numerically greater reduction in median viral load with 2 mg/kg bid AK0529 than with placebo at 96 hours was observed. A -4.0 (95% CI: -4.51, -2.03) median reduction in RSV signs and symptom score from baseline to 96 hours was observed in the 2 mg/kg group, compared with -2.0 (95% CI: -3.42, -1.82) in the placebo group. Conclusions. AK0529 was well tolerated in hospitalized RSV-infected infants. Treatment with AK0529 2 mg/kg bid

was observed to reduce viral load and clinical signs and symptoms.

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