Abstract citation ID: bvac150.1225

Pediatric Endocrinology

LBMON196

A Randomized Controlled Trial Of Vosoritide In Infants And Toddlers With Achondroplasia

Ravi Savarirayan[1], William W. Wilcox[2], Paul Harmatz[3], John Phillips III[4], Lynda E. Polgreen[5], Louise Tofts[6], Keiichi Ozono[7], Paul Arundel[8], Melita Irving[9], Carlos A. Bacino[10], Donald Basel[11], Michael B. Bober[12], Joel Charrow[13], Hiroshi Mochizuki[14], Yumiko Kotani[15], Howard M. Saal[16], George Jeha[17], Lynn Han[17], Elena Fisheleva[18], Alice Huntsman-Labed[18], and Jonathan Day[18]

[1]Murdoch Children's Research Institute, Royal Children's Hospital, and University of Melbourne, Parkville, VIC, Australia[2]Emory University, Atlanta, GA, USA[3]UCSF Benioff Children's Hospital Oakland, Oakland, CA, USA[4]Vanderbilt University Medical Center, Nashville, TN, USA[5]Lundquist Institute for Biomedical Innovation at Harbor-UCLA Medical Center, Torrance, CA, USA[6]Kids Rehab, The Children's Hospital at Westmead, Westmead, NSW, Australia[7]Osaka University Hospital, Osaka, Japan[8]Sheffield Children's NHS Foundation Trust, Sheffield Children's Hospital, Sheffield, United Kingdom[9]Guy's and St. Thomas' NHS Foundation Trust, Evelina Children's Hospital, London, United Kingdom[10]Baylor College of Medicine, Houston, TX, USA[11]Medical College of Wisconsin, Milwaukee, WI, USA[12]Nemours/Alfred I. du Pont Hospital for Children, Wilmington, DE, USA[13]Ann and Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, USA[14]Saitama Children's Hospital, Saitama, Japan[15]Tokushima University Hospital, Tokushima, Japan[16]Cincinnati Children's Hospital Medical Center, University of Cincinnati College of Medicine, Cincinnati, OH, USA[17]BioMarin Pharmaceutical Inc., Novato, CA, USA; [18]BioMarin (U.K.) Limited, London, United Kingdom

Background: Vosoritide increases annualized growth velocity (AGV) in children with achondroplasia aged 5 to 18 years. This global, phase 2, randomized, double-blind, placebo-controlled study evaluated the safety and efficacy of vosoritide on growth in children with achondroplasia aged 3 months to <5 years. **Methods:** This study compared once-daily subcutaneous administration of vosoritide, at doses of 15 or 30 μg/kg of body weight, with placebo. Eligible patients had participated, for up to 6 months, in an observational growth study to calculate their baseline AGV. The primary objective was to evaluate the safety and tolerability of vosoritide in children with achondroplasia. The primary efficacy evaluation was the change from baseline in height Z-score versus placebo at week 52 using an ANCOVA model. Secondary efficacy analyses included change from baseline in AGV and upper-to-lower body segment ratio versus placebo at Week 52 using an ANCOVA model. **Results:** A total of 75 patients were enrolled, with 11 sentinel subjects who received vosoritide to establish

PK and safety. A further 32 were randomized to receive vosoritide and 32 to receive placebo. A total of 73 patients completed the 52-week trial. All patients reported at least one adverse event. Four serious adverse events occurred with vosoritide and 8 with placebo, none were treatment-related. Two participants discontinued, one on vosoritide with pre-existing respiratory morbidity who had a fatal respiratory arrest and one on placebo who withdrew consent. In the full analysis population, vosoritide (n=43) compared to placebo (n=32), increased height Z-score by 0.30 SD (95% CI 0. 07, 0.54); increased AGV by 0.92cm/year (95% CI 0.24, 1.59); and did not worsen upper-to-lower body segment ratio which changed by -0. 06 (95% CI -0.15, 0. 03). **Conclusions:** Daily, subcutaneous administration of vosoritide to young children with achondroplasia was safe and resulted in increases in height Z-score and AGV. (Funded by BioMarin; ClinicalTrials.gov NCT03583697)

Presentation: Monday, June 13, 2022 12:30 p.m. - 2:30 p.m.