Evaluating the Effects of KRN23, a Fully Human Anti-FGF23 Monoclonal Antibody, on Functional Outcomes in Children with X-linked Hypophosphatemia (XLH): 40-week Interim Results from a Randomized, Open-label Phase 2 Study

Erik Imel, MD,1 Thomas Carpenter, MD,2 Agnemmeile Bood, MD,3 Wolfgang Höglé, MD,4 Raja Padidela, MD,5 William Farr-Hoff, MD,6 Anthony Portale, MD,7 Chao-Yin Chen, PhD,9 Alison Skrinar, PhD,9 Javier San Martin, MD,8 Michael Whyte, MD,10

1University of Utah, 2University of Cincinnati, 3University of Virginia, 4University of Wisconsin-Madison, 5Johns Hopkins University School of Medicine, 6Vanderbilt University School of Medicine, 7University of Michigan, 8University of Colorado, 9Ultragenyx Pharmaceutical, Inc., 10University of California, San Francisco, California, USA. *Authors listed alphabetically. 24/11/2021

INTRODUCTION

- X-linked hypophosphatemia (XLH) is a rare genetic bone disease characterized by low serum phosphate levels and high FGF23 levels.
- KRN23 is an investigational fully human IgG1 monoclonal antibody that binds to FGF23, resulting in decreased FGF23 levels.
- In this Phase 2 trial, 40-week baseline walking ability, pain, and function are reported in a substantial number of children with XLH despite current treatment with oral phosphate and active vitamin D for a mean of 6.6 years.

METHODS

- A phase 2, open-label, randomized, controlled trial was conducted with 2 treatment arms: KRN23 (52 subjects) vs. placebo (20 subjects).
- The primary endpoint was the change from baseline in 6MWT and POSNA-PODCI Global Functioning score after 40 weeks.
- All other functional outcomes were monitored for clinical relevance.

RESULTS

- At baseline, 15 of the 36 (42%) subjects had substantial functional impairment, defined as the POSNA-PODCI Global Functioning score >10.
- At Week 40, subjects in the KRN23 arm had a greater decrease in the POSNA-PODCI Global Functioning score compared to those in the placebo arm (p<0.0001).
- In the POSNA-PODCI Global Functioning score, all 14 subjects with walking impairment improved from 6MWT distance corrected for age, height, and weight.
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CONCLUSIONS

- Treatment with KRN23 significantly improved rickets at Week 40.
- Treatment with KRN23 for 40 weeks improved walking distance and functional outcomes in patients with impairment at baseline.
- In this Phase 2 trial, baseline walking ability, pain, and function are reported in a substantial number of children with XLH despite current treatment with oral phosphate and active vitamin D for a mean of 6.6 years.

- Treatment with KRN23 for 40 weeks improved walking distance and functional outcomes in patients with impaired baseline rickets and skeletal impairments, with substantial improvement in those with walking impairment.
- KRN23 treatment was generally well-tolerated with no serious adverse events observed.