Home-infusion experience in patients with Pompe disease receiving avalglucosidase alfa during three clinical trials (COMET, NEO-EXT, and Mini-COMET)

Jordi Diaz-Manera1
Derralynn Hughes2, Anthony Béhin3, Françoise Bouhour4, James Davison5,6, Sevim Erdem-Özdamar7, Si Houn Hahn8, Kristina An Haack8, Olivier Huynh-Ba9, Magali Periquet10, Swathi Tammireddy11, Nathan Thibault11, Tianyue Zhou11, Céline Tar12 and Ans T van der Ploeg13
1 John Walton Muscular Dystrophy Research Centre, Newcastle University International Centre for Life Newcastle upon Tyne
2 Lyosomal Storage Disorders Unit, Royal Free Hospital, London
3 AP-HP, Centre de référence des pathologies neuromusculaires Nord-Est-Ile de France, Service de Neuromyologie, Hôpital de la Pitié-Salpêtrière, Paris
4 Referral Centre for Neuromuscular Diseases, Hopital Neurologique, Lyon-Bron
5 Great Ormond Street Hospital NHS Foundation Trust, London
6 National Institute of Health Research Great Ormond Street Hospital Biomedical Research Centre, London
7 Department of Neurology, Hacettepe University Faculty of Medicine, Ankara
8 Department of Pediatrics, University of Washington School of Medicine, Seattle Children’s Hospital, Seattle
9 Sanofi Genzyme, Chilly-Mazarin
10 Sanofi Genzyme, Amsterdam
11 Sanofi Genzyme, Cambridge
12 CHRU de Lille, centre de référence des maladies neuromusculaires Nord Est Ile de France, Lille
13 Center for Lysosomal and Metabolic Diseases, Erasmus MC, University Medical Center, Rotterdam

Avalglucosidase alfa is a recombinant human alpha-glucosidase enzyme replacement therapy designed with increased mannose-6-phosphate content for improved cellular uptake vs. alglucosidase alfa. During three clinical trials (COMET[NCT02782741], NEO-EXT[NCT02032524], Mini-COMET[NCT03019406]), 16 patients with Pompe disease received avalglucosidase alfa via home infusion under healthcare professional supervision. As of September 2, 2021, these patients received a total of 279 infusions. Twelve patients with late-onset Pompe disease (LOPD) in COMET received between 2 and 36 home infusions; 2 patients with LOPD in NEO-EXT received 13 and 32 infusions, respectively; and 2 patients with infantile-onset Pompe disease (IOPD) in Mini-COMET received 6 and 8 infusions, respectively. Safety events occurred in 6 patients with LOPD and in none with IOPD. For 5 patients, 10 events were non-treatment-related non-serious adverse events (AEs). The remaining patient, a 32-year-old female enrolled in COMET, had an infusion-associated reaction (IAR) during her first home infusion at Week 59 in the study. The patient experienced eyelid edema and flushing, both non-serious AEs of special interest and mild intensity IARs, 2 hours after infusion initiation. The infusion was interrupted and methylprednisolone and dexchlorpheniramine were administered; the patient recovered the same day. After dose interruption, she received 4 infusions at the study site, with no IARs. She returned to the home setting and received 18 infusions before data cut-off, with no further IARs. No medication errors occurred during home-infusion. Overall, no unmanageable safety concerns were observed during home infusion of avalglucosidase alfa across the clinical trials in LOPD and IOPD. **Funding:** Sanofi Genzyme.