Systematic Review of Patient Focused Drug Development Meeting Reports for Conditions Affecting Neurodevelopment

Submitter Cristan Farmer

Affiliation National Institute of Mental Health

SUBMISSION DETAILS

I agree to provide poster pdf for attendee download. Yes

I have used the poster abstract template to develop my abstract. Yes

Methodological Issue Being Addressed The degree of overlap in endpoint concepts of interest across rare diseases affecting neurodevelopment is not well understood.

Introduction Endpoint measurement is a significant hurdle to clinical trials in rare diseases affecting neurodevelopment. Psychometric efforts are often focused on individual conditions and therefore do not achieve the large samples required of such methodologies. However, to the extent that various diseases share similar endpoint concepts of interest, these efforts may be combined. We therefore propose that the potential to capitalize on the collective commonness of rare disease is insufficiently tapped. In this systematic review of patient focused drug development (PFDD) meeting reports, we explored whether rare diseases affecting neurodevelopment substantively overlap in patient- and caregiver-identified concepts of interest, as a first step towards combining psychometric research efforts.

Methods PFDD meeting reports were extracted from the FDA website and evaluated for the following inclusion criteria: the meeting concerned a medical condition affecting neurodevelopment, based on the Human Phenotype Ontology database, and the meeting contained at least one of two target survey questions (“What are the top 3 most troublesome symptoms?” and “What are the top 3 ideal treatment targets?”). Normalization procedures, including coding verbatim responses into concept categories, were used to aggregate across conditions the responses and endorsement rates for the two target questions.

Results Sixteen conditions from 15 meetings were eligible for inclusion (Table 1). The median [IQR] sample size for each condition was 94 [54, 162] for “troublesome symptoms” and 70 [49, 108] for “ideal target.” Full consensus about any troublesome symptom or treatment target was rare for any condition. Three conditions had no concept that exceeded 30% endorsement. The cognitive/developmental and communication concepts had the highest endorsement rates of all concepts. For example, 14 (88%) meetings presented the cognitive/developmental concept as a most troublesome symptom, with median endorsement of 43% [IQR: 21%, 76%]. The median endorsement for cognitive/developmental as an ideal treatment target was 63% [22%, 73%] among the 11 (79%) of meetings which used it.

Conclusion The PFDD meeting program is essential to clinical trial development in rare genetic conditions affecting neurodevelopment. The results of this systematic review of PFDD meetings

support the assertion that conditions with broad etiological heterogeneity converge upon consistent concepts of interest, namely cognition and communication. Given the rareness of these populations, and the large sample requirements of many psychometric methodologies, leveraging these commonalities to combine data across conditions is a key opportunity to improve endpoint development for all rare diseases affecting neurodevelopment.

Co-Authors

Cristan Farmer[1], Victoria Kim[1], Tanvi Das[1], Seth Cutler[1], Heidi Wallis[2], Audrey Thurm[1]

[1] National Institute of Mental Health

[2] Association for Creatine Deficiencies

Keywords

Keywords
Patient Focused Drug Development
Rare Disease
Concepts of Interest
Clinical Endpoints

Guidelines I have read and understand the Poster Guidelines

Disclosures None