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The feasibility of utilising the OHDSI network to generate large-scale evidence of the safety of biologics.

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Introduction

A large-scale post-market surveillance program for biologics was proposed to the Australian National Health and Medical Research Council (NHMRC). The project, submitted in February 2017, proposed a collaboration between OHDSI and the Asian Pharmacoepidemiology Network (AsPEN) to describe the patterns of use of biologics, the safety of biologics and the identification of factors that place patients at increased risk of these events. In July we received reviewers comments on our proposal that specifically highlighted the global relevance of this work; "*The results of this work will generate real world evidence for regulators, clinicians and patients to support clinical decision-making*" and "*This is a very significant and innovative project. It involves a multi-national alliance and will produce globally relevant results and predictive models to inform identify and quantify safety problems arising with biologics and improve the clinical care of patients.*" Reviewers also highlighted the urgent need for evidence generation for biologics, "*The project addresses calls to action by international agencies and will impact human health given the rise in the development and use of biologic treatments. This is internationally important work and is likely to produce high impact papers and change treatment guidelines for biologics.*"

Reviewers, however, not familiar with large-scale network analyses, identified potential weaknesses in our proposal, "*There are two key weaknesses - the first is that the actual number of people on each biological within these possibly accessed datasets is not provided, the second is that the adverse outcomes that can be examined within these datasets is not clear…Is there an estimate for the number or proportion of patients in the Data Research Networks who have used or are using biologic treatments?*" To address this concern I asked the OHDSI community to generate counts of biologics across products. An SQL query was posted on the OHDSI forum on 6 July 2017 and while I slept the community rallied and on 7 July I received results from members representing 15 different databases representing over 7 million biologic drug eras. This response was communicated to the reviewers by the due date, 10 July.

Evidence of safety from clinical trials is limited as the median number of subjects included in these trials is between 438 and 1708 [1]. The limitations of pre-market clinical trials to demonstrate safety issues is highlighted by the high rate of post-market safety-related regulatory

announcements that was identified in a review of 174 biologics approved for use in the United States and Europe [2] almost one-quarter of products required some safety-related regulatory announcement.

Conclusion

This talk will highlight the process of performing a rapid feasibility assessment for a study to generate evidence of the safety of biologics.

References

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