PPTA
Plasma Protein Therapeutics Association

Day 1 Recap

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Public Workshop: New Methods to Predict the Immunogenicity of Therapeutic Coagulation Proteins

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PPTA's role

- The Plasma Protein Therapeutics Association works globally to:
  - Advocate for access to and affordability of therapies for patients
  - Engage in constructive dialogue with regulatory agencies
  - Collaborate with more than 20 patient advocacy organizations
- PPTA Immunogenicity Workshop Task Force
  - Industry-wide
  - Agenda development
  - Workshop participation

Day 1 Recap

- Session I: Mapping the landscape
  - Genetic determinants of immunogenicity in Hemophilia A & B
  - Need for well characterized clinical samples (biobanking)
    - There are possibilities, but how does this community utilize and implement those possibilities?
    - Can we connect biobanking with clinical data in ABIRISK?
    - Future sample use
  - Role of Glycans in Immunity

Session I

- Session provided important education and background
- Discussion to be continued in 2nd panel
  - Genetic Determinants of Immunogenicity: Is there consensus?

Session II

- Session II: Need to figure out what the questions are
  - My Life, Our Future: Genotyping for Progress in Hemophilia
  - European Initiatives and Lessons Learned
  - The EUHASS/CHESS approach to adverse event surveillance
  - Accurate Characterization of the Inhibitor Phenotype
  - PUPs and Inhibitor Testing: What's the Hypothesis?
  - Workshop on Haemophilia Registries

Session II

- Registries
  - ATHN, EUHASS/CHESS, other national patient registries
    - Recognize there are unknowns
      - What elements do we need/want to collect?
      - How can the elements be collected consistently?
    - Need for further understanding of informed consent, other considerations
  - Need for collective effort by and support of all stakeholders
    - Cannot be accomplished alone
    - What are the next steps?

Session II

- Assays: Importance of assay standardization
- PUPs: How can the PUP population be studied?

PUPs

- PUPs and Inhibitor Testing: What's the Hypothesis?
  - International registries would capture the immunogenicity of new products in PUPs
  - Test immunologic hypotheses
  - The current PUP EMA regulatory requirements and BioPharma's lack of urgency are hindering the search for solutions to inhibitors.
- Workshop on Haemophilia Registries
  - Review PUP approach in EMA guidance

PUPs

- FDA/EMA working together to readdress approach
- Discussion to be continued in 1st panel
  - Obtaining optimal benefits for patients

Session III

- Using pharmacokinetics as an efficacy predictor
  - PK is something that may be useful in hemophilia as it appears to be in larger population studies
  - Re-enlightened some of the uniqueness of hemophilia field
  - We don't get to learn as much as other experiences
- Pharmacogenomic Genome-wide Association Studies (GWAS) for rare diseases: A statistician's perspective
- Discussion to be continued in 3rd panel
  - What do we do with the genetic information: Are pharmacogenomic GWAS studies even possible?

Session IV

- Session IV: New products and new challenges
  - Current state of new products: Overview of phase 3 trials
    - Common theme: no immunogenicity to FVIII
  - Predicting T-cell epitopes by integrated modeling of antigen processing, MHC presentation, and TcR recognition
    - FVIIa case study
  - Preclinical predictive assessment of the immunogenicity of vatreptacog alpha – a bioengineered Factor VIIa molecule

Session IV

- Discussion to be continued in 4th panel
  - Preclinical assessments of immunogenicity: Are they useful? Can they inform clinical trials?
  - Prelude to what more will and can be done

Session V

- Session V: Predicting immunogenicity
  - Evaluating markers for preclinical assessment of immunogenicity: ABIRISK
  - Using predictive analytics to improve patient outcome: from data to insights: IBM
  - Deimmunizing protein molecules: NIH
- Discussion to be continued in 4th panel
  - More broadly and systematically, how do we handle this information?

Day 1 Recap

- Looking forward to stakeholders on panels
  - NIH
  - Regulators, both FDA & EMA
  - CDC
  - Industry
  - Academia
  - Patient Advocates
    - Recent increase in registry data
    - Opting in
  - Others, e.g. ABIRISK
- First five sessions of presentations and Q&A laid foundation for panel discussions

Session VI