

Closing remarks

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Objectives

- Bring together the experts and stakeholders on PML to a common purpose of reducing the burden of PML
- Mapping the ongoing research and identify gaps
- Finding a common understanding of the priorities for research
- Foster funding and partnerships
- Discuss mechanisms to ensure information sharing

Sessions

- Overview of PML as an adverse event
- The regulatory role – a collaborate approach
- Treatment of drug-induced PML
- Ongoing research in PML
- Research agendas
- Building collaboration
- Funding of research
- Keeping abreast of progress for the benefits of public health
- Conclusions

Perspectives on a research agenda

- Regulators
- Academia
- Clinical
- Industry

Research priorities (regulators)

1. What is the best approach to ascertain the number of drug-induced cases of PML?
2. Is it possible to identify populations at risk or patients not at risk prior to the treatment initiation with a drug associated with PML?
3. Are there early biomarkers of drug-induced PML that might be used in the mitigation of severity of the clinical manifestation of PML?
4. What is a suitable in vivo/animal model for PML?
5. What are the best drugs or combination of drugs with anti-JCV activity?
6. What are the best treatment strategies for both PML and IRIS?
7. What is the long-term safety and effectiveness of plasma exchange/immunoadsorption in patients with drug-induced PML?
8. What is the best tool for evaluation of effectiveness of risk minimisation activities in PML?

Research priorities (academia)

Research approaches

- 1.Molecular genomics / proteomics, viral and host
- 2.Viral gene regulation in specific cells i.e. glia vs. neurone
- 3.Immunology of therapies and host response to infection

Drug discovery

- 1.Small molecules for interruption of viral growth once identified; relevant cell model for screening
- 2.Vaccines, peptides, VLP (like papilloma): Prophylactic / therapeutic
- 3.Pre-clinical studies / clinical studies : relevant animal model for pathogenesis and intervention

Research priorities (clinical)

1. Risk/benefit ratio for treatment? – should my patient be treated with drug X?
2. Predictors for PML? Which patients should not be put on the drug; What are the lab parameters I should be following in my patients treated with drug X?; MRIs and CSF testing – how often?
3. What is the value of a drug holiday? Should I stop drug X after 12-months, 18-months, 2-years?
4. PML diagnosis – my MS patient has experienced new neurological problems- how distinguish PML vs. MS relapse?
5. How to treat PML?
6. How to mitigate risk e.g. through patient selection?

Research priorities (industry consortium)

1. Better predict, prevent and treat PML
2. Creation of a clinical database (demographics, clinical, images)
3. Establish a repository of samples
4. Funding an academic collaborative research network (basic biology of JCV, pathogenesis of PML; immune response to JCV; viral changes associated with PML; animal models of PML)
5. Clinical validation of risk stratification assay
6. Clinical evaluation of emerging PML therapeutics

Research priorities (patients)

1. More collaboration on benefit risk methods and decisions
2. Improve pathways to disseminate information
3. Clarify role of anti-body as risk indicator
4. Risk of PML beyond three years
5. Develop anti JCV therapy

Keeping abreast: Innovative ways of working

- Workshop brings together key stakeholders
- Foster capacity building through networking, information sharing, best practice, tackling obstacles, collaboration
- Support a PML research agenda
- Encourage the dissemination of research agenda to funding bodies

Immediate next steps

- Publish: website + journal
- Research agenda disseminated to funders
- Encourage future research collaborations

Conclusions

- The regulators have provided the forum
- Now its up to all of us to play our part:
 - Treat
 - Prevent
 - Diagnose
 - Research
 - Collaborate
 - Fund
 - Share knowledge
- To a common purpose of reducing the burden of PML

- Thank you