Systematic Review of Scrub Typhus Landscape: Preliminary Results

Kartika Saraswati1,2,3,4, Brittany Maguire3,4, Sauman Singh3,4, Nicholas Day2,3, Philippe J Guérin3,4
1Eijkman-Oxford Clinical Research Unit, Eijkman Institute for Molecular Biology, Jakarta, Indonesia. 2Mahidol-Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand. 3Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom. 4Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom

Aim
To assess the characteristics of scrub typhus clinical studies and explore the needs and feasibility to develop a scrub typhus individual participant-level data (IPD) platform

Background
• Compared to its magnitude, evidence to optimise treatment and disease control is sparse
• Treatment recommendations vary by regions and lack supportive evidence of efficacy
• Existing data collected from past clinical trials and longitudinal observational studies could be a source of information to address research priorities and knowledge gaps

Methods
• Systematic literature review of scrub typhus efficacy studies
• Extracted information: Treatments tested, patient characteristics, diagnostic methods, geographical location, outcome measures, statistical methodology
• Inclusion criteria: Clinical trials and longitudinal observational studies of scrub typhus treatment
• Search done from January 1998 to March 2018
• PROSPERO registration: CRD42018089405

Results
• Systematic review:
  • 2,647 articles screened
  • 99 studies included:
    • 8 clinical trials
    • 91 observational studies
  • 390 case series and reports also identified
• Population:
  • 9,282 patients in 11 countries enrolled
  • 14 studies included pregnant participants
  • 4 studies included HIV positive participants
  • 9 studies included immunocompromised participants
  • 9 studies included malnourished participants

Contact details
We are looking to engage with stakeholders and leaders of the scrub typhus research community
Contact: Kartika Saraswati kartika.saraswati@ndm.ox.ac.uk & info@iddo.org

Ongoing work & preliminary conclusion
• Data validation in progress
• Data analysis and quality assessment to follow
• Although only a few scrub typhus clinical trials found, substantially more data available from observational studies
• This work will provide the opportunity to understand the landscape of scrub typhus treatment studies and will assess the feasibility of addressing research questions using IPD platform and IPD meta-analysis
• Outreach to scrub typhus research community: building IPD platform require extensive collaboration

Figure 1: PRISMA flowchart
*18 records with title only, full texts not accessible and currently under retrieval; **15 full texts in Chinese and 1 in Korean still to be translated for review

Figure 2: Number of included studies per country

Figure 3: Number and type of studies per year

Figure 4: Diagnostic methods used in studies

Figure 5: Observed outcomes across studies