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RISK OF TRANSVERSE MYELITIS FOLLOWING DENGUE INFECTION: A SYSTEMATIC REVIEW OF THE LITERATURE

Badat N,[1] Abdulhussein D,[1] Ojubolamo O,[2] Oligbu G[3]

[1]Imperial College School of Medicine, [2]Department of Medicine, Queens Romford, [3]St. George's Paediatric Infectious Diseases Research Group, London, United Kingdom.

BACKGROUND:

Dengue virus (DENV) is the most common arbovirus disease, with wide spectrum of presentation. Spinal cord involvement in dengue infection (DF) is rare. However, the risk of transverse myelitis (TM) following Dengue has not been systematically assessed.

OBJECTIVE:

To assess the risk of transverse myelitis following dengue infection and underlying mechanisms.

METHODS:

- Systematic review of publishes literature (case reports and observational studies)
- January 1974 – December 2017
- English language, online databases
- Studies assessing risk of TM following DF

RESULTS:

- We identified 226 potential studies, of which 201 studies did not meet the eligibility criteria and were excluded; Figure 1&2.
- We included 25 publications involving 2672 cases of DF. **10.8%** (289/2672) had neurological complications, of which **2.3%** (61/2672) was TM.
- For articles reporting epidemiological data, the neurological complication was twice in males compared to females; 67.7% (130/192) vs 32.7% (62/192), and 1.5 fold increase TM for males; 59.3% (32/54) vs 40.7% (22/54); Figure 3.
- The mean age at presentation was **33.1 years (Range 0.75 – 61)**, with onset at 11.7days.
- The method of diagnosing TM due to DF was mainly IgM seropositivity (92% (n=23/25)).
- The commonest treatment modality was steroids (78.3% (n=18/23)).
- Only half had full recovery (50.8% (n=31/61)).
- There was *no mortality* following dengue, however, the crude case fatality rate following TM was 3.3% (n=2/61).

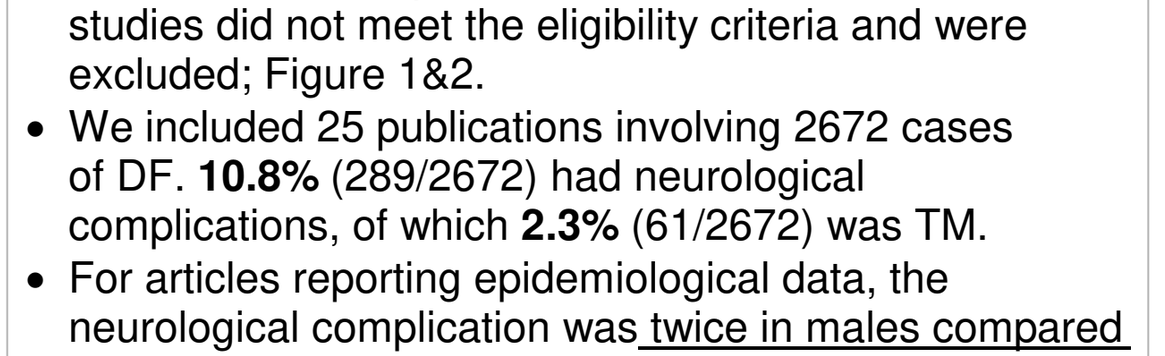
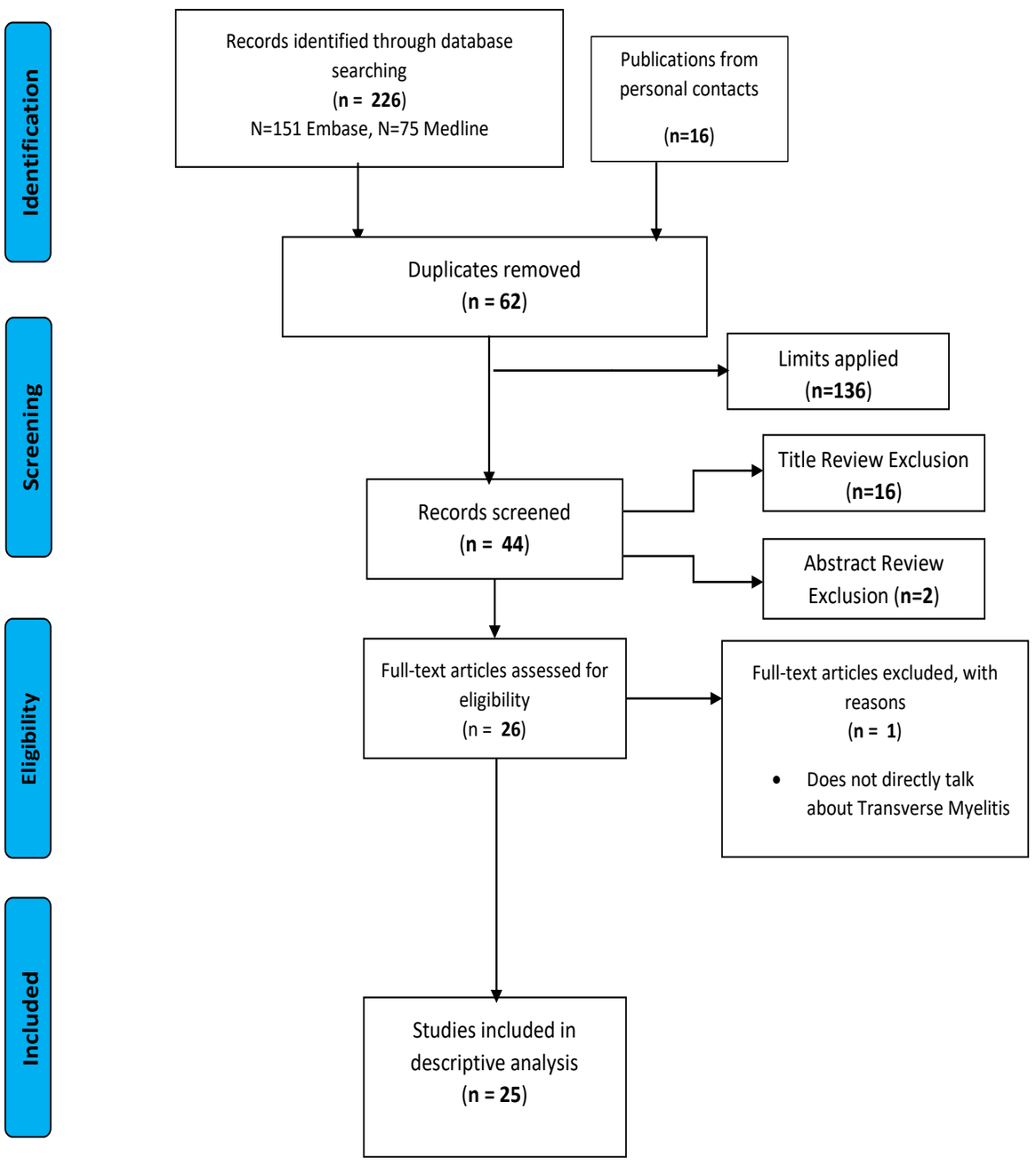


Figure 3: Complications following Dengue Infection

Results

Figure 1: Flowchart of study selection process



Search	Results
Transverse Myelitis Category	146970
Dengue Virus Category	83794
Transverse Myelitis AND Dengue Virus Category(ENG)	226
(Additional publications from contacts)	16
Duplicates Removal(62)	180
Limits Applied and Studies Removed(136)	44
Title and Abstract Exclusion(18)	26
Full Text Exclusion(1)	25

Figure 2: Data Collection

CONCLUSION:

This review highlights the risk of TM following dengue. Although neurological complications are rare – especially TM, once set in, it is associated with a significant morbidity and mortality.

References available on request.