

sible cause of fever or seen as a co-infection to malaria. The findings further strengthen the importance of vector control measures.

The collected material will be further analysed. Neutralization test might be a way forward, as looking at IgM-reactivity and for the microbes by PCR.

\*Niklasson; *Epidem. Inf.* (1987), 99, 517–522

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#### Investing in emerging infectious diseases: A systematic analysis of UK research



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**Background:** Emerging and infectious diseases threaten health, security, and the global economy. However, little is known about investments in research to tackle outbreaks and innovate new tools for infectious disease control.

**Methods & Materials:** We systematically searched databases and websites for information on research investments for the period 1997–2010. We identified 325,922 studies for screening, included 6,165 studies in the initial analysis, and identified 654 studies on emerging infectious diseases in the final analysis.

**Results:** We identified a total research investment in emerging infectious diseases of £199 million, accounting for 7.7% of a total research investment in infectious diseases of £2.6 billion. In comparison, investment in HIV research amounted to £478 million (18.4% of total investment).

Diagnostic tools for control accounted for £9.8 million (4.9%) across 66 studies. Studies assessing therapeutics accounted for £20.0 million (9.9%) across 35 studies. Vaccine research attracted the least funding for tools to tackle emerging infectious diseases, with £11.5 million (5.8%) across 24 studies.

Hepatitis C received the most investment with £59.7 million (30.0%), followed by prion research with £33.5 million (16.8%), *Campylobacter jejuni* with £24.1 million (12.1%), and *Helicobacter pylori* with £15.1 million (7.6%). Although total influenza investment was £80.1 million, funding specifically for H5N1 influenza virus was £13.7 million (6.9%) and for H1N1 influenza virus was £10.8 million (5.4%).

Public funding accounted for £144.0 million (72.3%) across 361 studies with philanthropic funding awarding £40.6 million (20.4%) across 173. Preclinical research attracted the most investment with £142.4 million (71.5%) followed by epidemiological and operational research with £42.1 million (21.2%) and product development research with £12.2 million (6.1%). Phase 1, 2, 3 clinical trials was the least well-funded type of research with £2.5 million (1.2%).

**Conclusion:** Emerging infectious diseases receives small amounts of funding compared to other scientific disciplines, with the exception of HIV. It is essential that we map, monitor and

evaluate emerging infectious disease research funding given their importance to global health security.

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#### Neurological aspects of human parvovirus B19 infection: A systematic analysis



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**Background:** Parvovirus B19 has been linked with various clinical syndromes including neurological manifestations. However, its role in the latter remains not completely understood. Although, the last 10 years witnessed a surge of case reports on B19-associated neurological aspects, the literature data remains scattered and heterogeneous, and epidemiological information on the incidence of B19-associated neurological aspects cannot be accurately extrapolated. Our aim was to systematically identify the characteristics of cases of B19-associated neurological manifestations.

**Methods & Materials:** A computerized systematic review of existing literature concerning cases of B19-related neurological aspects was conducted using all databases included in Web of Knowledge and PubMed database following PRISMA guidelines. Data were summarized using percentages and cross tabulations. The 95% confidence intervals for percentages were calculated using the Wilson method. All statistical analyses used the conventional two-sided 5% significance level and were carried out using SPSS version 20 and CIA version 2.0.

**Results:** As shown in Figure 1, 89 articles describing 129 cases of B19-related neurological aspects were considered eligible and further analysed; 79 (61.2%) were associated with central nervous system manifestations, 41 (31.8%) were associated with peripheral nervous system manifestations and nine (7.0%) were linked with myalgic encephalomyelitis. The majority of the cases (50/129) had encephalitis. Clinical characteristic features of the cases were analysed, and possible pathological mechanisms were also described.

**Conclusion:** B19 should be included in differential diagnosis of encephalitic syndrome of unknown aetiology in all age groups. In addition, B19 should be included in differential diagnosis of some peripheral nervous system manifestations such as neuralgic amyotrophy. Diagnosis should rely on investigation of anti-B19 IgM antibodies and B19 DNA in serum or CSF. Treatment of severe cases could benefit from a combined regime of intravenous immunoglobulins and steroids.

To confirm these outcomes, goal-targeted studies are recommended to exactly identify epidemiological scenarios and explore potential pathogenic mechanisms of these complications. Performing retrospective and prospective, and multicenter studies concerning B19 and neurological aspects are in demand.

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