Dengue and chikungunya fever in returning travellers: experience from the Health Protection Agency, UK

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Background: The Rare and Imported Pathogens Laboratory (RIPL), at the HPA Porton Down provides diagnostic services for UK clinicians for pathogenic Arboviruses. Although dengue and chikungunya are the commonest arboviral infections globally, data on the clinical features and epidemiology of imported dengue and chikungunya is scarce.

Methods: Retrospective analysis from 1/1/08 until 31/12/10 of all cases of acute dengue fever or chikungunya fever diagnosed through samples sent to RIPL and the clinical data obtained from the referring clinician.

Results: 178 patients (mean age 43 years) had confirmed or suspected chikungunya (27 in 2008, 66 in 2009, and 85 in 2010). 60% of patients were female. The majority of patients acquired chikungunya infection following travel to India (37.4%). 16 patients had positive PCR. 43 were negative by PCR. With regards to symptoms, the majority described fever (74.7%), followed by arthralgia (44.9%) or rash (24.7%).

Conclusion: In the current era of globalisation, there is a risk of acquiring dengue and chikungunya from endemic areas, and this study can aid clinicians in increasing awareness of the clinical manifestations in returning travellers.

Biofilm development capability of Enterococcus faecalis and Streptococcus mutans clinical isolates under dual species model: an in vitro study

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Background: Capability of biofilm formation is an important virulence determinant of Streptococcus mutans and Enterococcus faecalis. Both microorganisms are highly associated with oral and endocardial infections. Most investigations on biofilm formation have been carried out by using single species model. It is important to understand the capability of biofilm formation by S. mutans and E. faecalis clinical isolates under dual species model.

Methods: Thirty four clinical isolates of E. faecalis and thirty four clinical isolates of S. mutans were tested for biofilm formation under dual species model by microtitre plate assay. To assess the antimicrobial activity of chlorhexidine (CHX) against single and dual species biofilm, resazurin assay was performed.

Results: All the E. faecalis and S. mutans clinical isolates showed strong biofilm forming capability in single species model. In dual species model, the biomass staining revealed that 78% E. faecalis clinical isolates decreased the biofilm biomass in the presence of S. mutans biofilm. This reduction is strain dependent and varied by strain to strain. The data from resazurin assay showed that the presence of E. faecalis in a dual species biofilm resulted statistically significant increase in resistance to a chlorhexidine treatment (p<0.05) for all S. mutans clinical isolates.

Conclusion: Our results showed that the biofilm development capability of S. mutans clinical isolates in the presence of E. faecalis clinical isolates was higher in dual species model. We also suggested that biofilm forming capability of these pathogens varied by strain to strain. These findings substantiate the further investigations on polymicrobial biofilm settings with high range of clinical isolates in the understanding of biofilm formation capability by these pathogens.

http://dx.doi.org/10.1016/j.ijid.2012.05.922