SURVEILLANCE OF GASTROINTESTINAL INFECTIONS IN INDIVIDUALS OVER THE AGE OF 5 YEARS IN SOUTH AFRICA - Siobhan Lindsay Johnstone (690295)

Abstract

Gastrointestinal infections cause significant mortality and morbidity, especially in Africa. While children ≤5 years of age bear the brunt of diarrhoeal disease, there is a significant burden in older age groups. Limited data on aetiology in these older age groups limits appropriate interventions. Diarrhoeal surveillance is important for monitoring disease trends in a population and should inform testing and treatment guidelines, and interventions. This body of work evaluated the epidemiology of diarrhoea at each level of the surveillance pyramid to assist in interpretation of routine health data and identify gaps in surveillance.

A household survey was conducted in Soweto to estimate community diarrhoeal prevalence, associated risk factors and healthcare seeking behaviors. An analysis of diagnostic testing practices for diarrhoeal diseases was done, using a doctors' survey, at three public hospitals in South Africa. Routine diagnostic data and enhanced surveillance data were compared to evaluate patient-related factors associated with requests for diagnostic investigation, type of diagnostic testing offered and the efficiency of available tests. A hospital surveillance study investigated the infectious causes of diarrhoea in hospitalised patients >5 years.

Results indicated a high diarrhoeal burden across all age groups in South Africa (5.3% of respondents reported an episode in the preceding 2 weeks). While the majority of infections were mild, 40% required healthcare. Many of those requiring healthcare (34%), specifically adults, were unable to access the required care. Those that did access healthcare were treated empirically and seldom had stool samples collected for diagnostic investigations (approximately 10% of admitted cases). Available diagnostics in public health laboratories detected pathogens in only 13.7% of these submitted stools due to pre-analytical and analytical issues including not testing for all relevant pathogens. Diarrhoeal prevalence was particularly high among HIV-infected patients (67.5% of patients >5 years admitted for diarrhoea were HIV-infected) and these patients presented with a unique aetiology.

This research highlights the need for diarrhoeal testing and treatment guidelines based on local epidemiological data with a focus on HIV-infected patients. Current diagnostics require optimisation including specimen collection, standardisation, pathogens included in routine testing panels, turnaround time and methods of detection. This will guide decisions on future public health interventions including vaccines.