

Utilization of Standard Paediatric Observation Chart to Evaluate Infants under Six Months Presenting with Non-Specific Complaints

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Abstract : Objective: Young infants are often brought to the Emergency Department (ED) with a variety of complaints, some of them are non-specific and present as a diagnostic challenge to the attending clinician. Whilst invasive investigations such as blood tests and lumbar puncture are necessary in some cases to exclude serious infections, some basic clinical tools in addition to thorough clinical history can be useful to assess the risks of serious conditions in these young infants. This study aimed to examine the utilization of one of clinical tools in this regard. Methods: This retrospective observational study examined the medical records of infants under 6 months presenting to a mixed urban ED between January 2013 and December 2014. The infants deemed to have non-specific complaints or diagnoses by the emergency clinicians were selected for analysis. The ones with clear systemic diagnoses were excluded. Among all relevant clinical information and investigation results, utilization of Standard Paediatric Observation Chart (SPOC) was particularly scrutinized in these medical records. This specific chart was developed by the expert clinicians in local health department. It categorizes important clinical signs into some color-coded zones as a visual cue for serious implication of some abnormalities. An infant is regarded as SPOC positive when fulfills 1 red zone or 2 yellow zones criteria, and the attending clinician would be prompted to investigate and treat for potential serious conditions accordingly. Results: Eight hundred and thirty-five infants met the inclusion criteria for this project. The ones admitted to the hospital for further management were more likely to have SPOC positive criteria than the discharged infants (Odds ratio: 12.26, 95% CI: 8.04 - 18.69). Similarly, Sepsis alert criteria on SPOC were positive in a higher percentage of patients with serious infections (56.52%) in comparison to those with mild conditions (15.89%) ($p < 0.001$). The SPOC sepsis criteria had a sensitivity of 56.5% (95% CI: 47.0% - 65.7%) and a moderate specificity of 84.1% (95% CI: 80.8% - 87.0%) to identify serious infections. Applying to this infant population, with a 17.4% prevalence of serious infection, the positive predictive value was only 42.8% (95% CI: 36.9% - 49.0%). However, the negative predictive value was high at 90.2% (95% CI: 88.1% - 91.9%). Conclusions: Standard Paediatric Observation Chart has been applied as a useful clinical tool in the clinical practice to help identify and manage young sick infants in ED effectively.

Keywords : clinical tool, infants, non-specific complaints, Standard Paediatric Observation Chart

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