

# **Recognising clinical instability in hospital patients before cardiac arrest or unplanned admission to intensive care. A pilot study in a tertiary-care hospital.**

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**OBJECTIVE:** To investigate the nature and duration of clinical instability (i.e., abnormalities in simple physical observations or laboratory test results) in hospital patients before a "critical event" (i.e., a cardiac arrest or an unplanned admission to intensive care). **DESIGN:** Retrospective survey of medical records of all patients having critical events (CEs) over 12 months. Data on hospital and Intensive Care Unit (ICU) patients were obtained for comparison with the study population. **SETTING:** A 300-bed metropolitan teaching hospital with a seven-bed ICU. **PATIENTS:** All patients having CEs over a 12-month period (January to December 1997). **MAIN OUTCOME MEASURES:** Number of patients with clinical instability before a CE; duration of clinical instability before a CE; number of medical reviews of each patient before a CE; mortality rate and length of hospital stay for all patients. **RESULTS:** There were 122 CEs in 112 patients (median, 1; range, 1-4). Of the CEs, 79 were unplanned ICU admissions (14 subsequent to cardiac arrest calls), and 43 were cardiac arrest calls not resulting in ICU admission. Each CE was preceded by a median of two (range, 0-9) criteria for clinical instability. The median duration of instability before a CE was 6.5 hours (range, 0-432 hours), and in that time a median of two (range, 0-13) medical reviews took place. The incidence of CEs in the total hospital population (122 CEs/19,853 admissions) and in ICU patients (79 unplanned admissions/515 admissions) was 0.6% and 15%, respectively. There were 70 deaths (62%) among the 112 patients, compared with a total of 392 deaths (2% of admissions) in the hospital, of which 107 were in ICU. **CONCLUSIONS:** Very few patients suffer a CE while in hospital. However, those who do frequently manifest abnormalities in simple physical observations and laboratory test results before the CE. More rapid intervention in response to warning signs might provide a better outcome for these patients.

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