Emergency Care Institute
NEW SOUTH WALES

ACI NSW Agency for Clinical Innovation

THE SILENT TREATMENT

Learning from our Incidents:

RED FLAGS in the Emergency Department

The case

54 year old male presented to ED with 2-week history of dyspnoea and associated cough.

Referred to ED by GP who was concerned about patient's dyspnoea, ankle swelling and orthopnoea.

An outpatient CXR had been attended, showing bilateral basal pleural effusions.

The case

On examination:

- *patient able to speak in full sentences*
- *afebrile*
- *SaO2 98% on room air*
- *HR 130/min*

What additional information should you acquire from the patient?

The case

Assessed by JMO and found to have had no reported episodes of fever or chest pain and no underlying medical history. Observations at time of medical assessment:

- *Afebrile*
- *BP 127/90*
- *HR 119/min*
- *SaO2 90%*

The case

Bibasal crepitations heard on auscultation, with no other abnormal physical findings.

ABG performed:

- *pH 7.446*
- *pCO2 28.4*
- *SaO2 93.9%*
- *elevated BSL*

What would you do now?

The case

The ED JMO discussed the case with the senior medical officer, and it was decided that the patient was to be discharged home on oral antibiotics.

He was advised to follow up with GP and re-present if symptoms worsened.

Which features of this patient's presentation are the Red Flags indicating a high risk of serious disease?

The case

The following day, the ED Staff Specialist received a phone call from the forensic pathologist that the patient had died.

Autopsy revealed a combination of **ischaemic heart disease with extensive myocardial fibrosis, thrombus in left anterior descending coronary artery, and left ventricular apical aneurysm with mural thrombus**.

What is the lesson here?

Abnormal vital signs must be explained, addressed by clinical treatment, and a review by senior doctor, preclude discharge of the patient.

What's the evidence?

- **Abnormal vital signs in the emergency department can be a harbinger of very bad things to come**[1]. A 1994 study at the State University of New York at Stony Brook correlated abnormal vital signs in the field with an increased likelihood of admission and death[2].

- These findings were demonstrated again in 2008 at Groote Schuur Hospital in Cape Town, South Africa[3].

- Sklar et al studied deaths of ED patients after discharge, and found that predictors of unexpected deaths included abnormal vital signs in the emergency department[4].

What's the evidence?

- Clinicians' responses to abnormal vital signs in an emergency department are virtually unstudied, but a qualitative study done at the University of Western Sydney suggests that documentation and ineffective communication frequently kept the information about abnormal vital signs from reaching the attending physicians[5].

- Workload, distractions, and interruptions led to another segment of missed abnormal vital signs due to human factors. These authors recommend educational programs and improved communication networks.

What's the evidence?

- In a study in New Mexico, abnormal vital signs emerged as one of four common themes in unexpected death within one week of discharge from ED – 83% of patients who died within one week of ED discharge (regardless of being from an expected or unexpected cause).

- In a Western Australian qualitative data review[5], abnormal vital signs appeared to occur commonly. Results showed that the presence of tachycardia was particularly striking and occurred in 48 of 58 (83%) patients, including 25 of 35 (71%) possible error cases.

References

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