NSW HEALTH

Safety Notice 002/08

29 January 2008

Distributed to:

- Chief Executives
- Directors of Clinical Governance
- Directors of Clinical Operations

Action required by:

- Directors of Clinical Governance

For response by:

No response to Quality and Safety Branch required

We recommend you also inform:

- Directors of Emergency Medicine
- Area Directors of Nursing
- Nurses
- Medical staff

Deadline for completion of action

Not applicable

Quality and Safety Branch
NSW Department of Health
Tel. 02 9391 9200
Fax. 02 9391 9556
Email
quality@doh.health.nsw.gov.au

www.health.nsw.gov.au/quality/sabs/register.html

Pulmonary Embolism

Diagnosis in Young People

Background

Failure to identify pulmonary embolism (PE) because **the diagnosis is not considered** remains one of the major problems confronting successful detection of PE.

A **21-year-old male** presented to the same emergency department (ED) on three occasions.

- First presentation – chest pain and shortness of breath. Diagnosis of PE considered. CXR and ECG normal, D-dimer not performed but recorded as negative in the medical notes.
- Second presentation – pleuritic chest pain and mild temperature. CXR showed consolidation on left base. Diagnosed as community acquired pneumonia and discharged.
- Third presentation – differential diagnosis of PE. Commenced IV antibiotics. CXR showed bilateral consolidation. Patient arrested before elective intubation could be performed.

Post mortem revealed a massive PE.

A **28-year-old female** presented to ED

- Abdominal pain, urinary urgency, thirst, diarrhoea, chest tightness and nausea. First ECG – inverted t-waves observable in Lead III. BSL high. Working diagnosis of diabetic keto-acidosis.
- Oxygen saturations sub-optimal since admission. Became increasingly agitated and tachypnoeic. Second ECG – right heart failure. Provisional diagnosis of PE.
- Intubated and resuscitation commenced.

Post mortem revealed a massive PE.

A **23-year-old female overseas tourist** presented to ED

- Presentation to ED – fainted three times that day, decreased oxygen saturation, differential diagnosis PE but discharged with diagnosis of dehydration.
- 36 hours later - collapsed following complaint of shortness of breath. Ambulance Officers commenced resuscitation, patient dead on arrival at hospital.

Post mortem - provisional cause of death a massive PE.

Suggested Actions by Area Health Services:

1. Ensure that this Safety Notice is distributed to all relevant clinical staff.
2. Ensure emergency department clinical protocols are reviewed to include differential diagnosis of pulmonary embolism for ALL people presenting with pleuritic chest pain.

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Risk Factors for Pulmonary Embolism

The incidence of PE increases with age but no age group is immune. Risk factors include immobility, trauma, surgery, obesity, contraceptive pill, abortion, plane travel, significant family history.

Signs and Symptoms of Pulmonary Embolism

Common signs and symptoms include dyspnea, pleuritic chest pain, tachypnea, tachycardia, cough, wheezing, crackles, calf or thigh pain.

None of these signs and symptoms is unique to PE.

References

Kasper DL, Braunwald E, Fauci AS et al. Harrison's Online, complete contents of Harrison's Principles of Internal Medicine, 16th edition. Accessed via CIAP.

Stein PD, Beemath A, Matta F et al. Clinical Characteristics of Patients with Acute Pulmonary Embolism: Data from PIOPED II. The American Journal of Medicine 2007(10);120:871-879.

McRae SJ, Eikelboom JW. Simplifying the diagnosis of pulmonary embolism. MJA 2007;187(6):325-326.