

Background

Trauma is one of the leading causes of death in patients under 45 years of age. For patients with major trauma, whole body CT has become a routine practice and default imaging. Various studies suggest improved outcomes with CT but also at a cost of a number of negative scans.

At present there are no national guidelines or scoring system to quantify trauma. Whole body CT is done to decide on early treatment and discharge from hospital. However, there are concerns over the number of negative scans in young patients and risks of radiation induced cancer.

Objectives

To identify whether we are overusing whole body CT service, and to potentially find out whether we could safely reduce the number of scans without missing significant injuries.

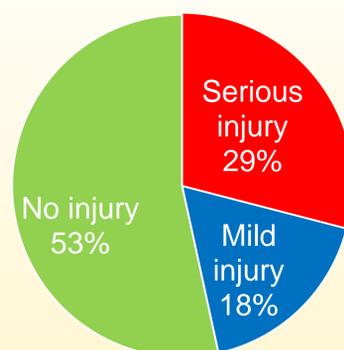
Methods

The retrospective study on whole body CT scans performed on trauma patients in our hospital from December 2017 to April 2018 were collected. A total of 131 patients had whole body CT which includes CT head, neck, chest, abdomen and pelvis (25mSv).

Results

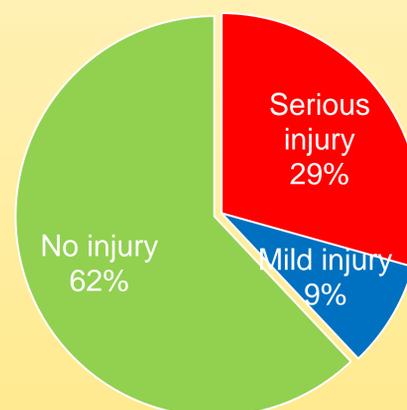
Among the 131 patients who had trauma CT scan there were 69 male patients and 62 female patients. 2 patients were less than 16 years old. The top 3 causes of trauma for these patients were road traffic accidents, fall from height and assault.

Presented below is the pie chart showing the percentage of the patients in whom the scan showed no injury, (53%) minor injuries (18%) such as rib fracture or serious injuries (29%).



■ Serious injury ■ Mild injury ■ No injury

Further analysis demonstrates that 62% of patients less than 45 years old had a CT scan negative for any injury.



■ Serious injury ■ Mild injury ■ No injury

Conclusion and Recommendations

The majority of trauma CT scans showed no injury at all. Several studies have shown that whole body CT for trauma does reduce the length of hospital stay and permits early diagnosis, but this is associated with a high radiation dose especially important in children. The average dose for Whole body CT is 25 mSv. This according to government data gives 1:800 risk of life time cancer and this is increased two fold for paediatric population to about 1:400. IRMER demands all investigations utilising ionising radiation must be justified.

At present there are no clear guidelines as to determine which patients require CT scan. CT scans may be performed not because there is a high clinical risk of significant injury but rather to avoid missing injuries and for quick diagnosis and early discharge. This is causing unacceptable radiation burden on the population.

We are considering dividing trauma patients in to conscious and unconscious. For conscious patients with minor injuries use of whole body CT scan should be carefully considered. Whole body CT should not be a screening study for trauma but used to evaluate specific and appropriate body areas .

We are aware that there is good evidence that whole body CT scan has a survival benefit in patients with serious injuries but the less severely injured patient and the uninjured patient must be protected from unnecessary radiation exposure.

References

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