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Radiographic Evaluation Of The Pregnant Trauma Patient: What Are We Willing To Miss?

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Abstract

Objective: Trauma is the leading cause of non-obstetrical causes of death in pregnant patients. The use of radiographic imaging for evaluation in the trauma bay is a controversial topic. However, in some cases the benefits of using radiographic imaging to ensure maternal survival outweigh the risks of radiation exposure to the fetus. This study explores whether sparing fetal exposure to radiation by minimizing use of ionizing radiographic imaging to the mother will put the mother at risk for a delayed diagnosis of injury. We hypothesize that minimizing the use of radiographic imaging in the initial assessment of pregnant trauma patients does not lead to a higher incidence of delayed diagnosis.

Study Design: A retrospective chart review at an urban level 1 trauma center reviewing pregnant patients involved in blunt trauma and a cohort of non-pregnant patients matched for age and ISS. Data points included: number and type of imaging studies performed on initial presentation and the number and type of imaging studies that were delayed. The primary outcome was incidence of delayed diagnosis in the pregnant trauma patient compared to the non-pregnant patient.

Results: 83 pregnant and 167 non-pregnant patients were examined. Average average ISS was 2.7 in both groups. 95.2% of the pregnant population had at least one imaging study done versus 100% of the control group ($p=0.004$). The pregnant population had an average of 4.3 images performed compared with an average of 6.8 images in the non-pregnant cohort ($p<0.001$). 18 (21.7 %) pregnant patients had delayed imaging and 58 (34.7%) control patients had delayed imaging ($p=0.03$). This led to an incidence of delayed diagnosis in 1% of pregnant patients and 5% control patients ($p=0.17$).

Conclusion: Our study shows that bluntly injured pregnant trauma patients receive significantly fewer radiographic images upon presentation than their non-pregnant counterparts. However, this led to insignificant difference in delay of injury diagnosis between pregnant and non-pregnant patients when matched for age and ISS. Though the ISS was low for both patient cohorts, this study suggests that mitigated radiographic imaging in the pregnant trauma patient is safe and does not result in delayed diagnosis of injury.

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