# MAJOR TRAUMA IN PREGNANCY: A SEVEN YEAR CASE REVIEW AT A SCOTTISH MAJOR TRAUMA CENTRE

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## 1 INTRODUCTION

Major trauma in pregnancy demands adherence to standard trauma protocols alongside pregnancy-specific adaptations.[1] Mismanagement can occur as a failure to modify care appropriately, or inappropriate deviation from established practice.[2] Pregnant people face a 1.6-fold increased mortality risk after major trauma compared to non-pregnant people[1], yet the condition is rare enough that trauma teams rarely develop sustained expertise. In the UK, approximately 1% of female major trauma patients are pregnant.

We reviewed all relevant cases at our centre to characterise current practice and identify opportunities for improvement.

## 2 METHODS

We interrogated the Scottish Trauma Audit Group (STAG) database for pregnant patients presenting to our Major Trauma Centre (January 2018-December 2025). STAG captures patients with stays ≥3 days, critical care admissions, or deaths following trauma. Case notes, imaging, and documentation were reviewed against published guidelines.[2] Written consent was obtained where possible and Caldicott approval granted for uncontactable patients.

## 3 RESULTS

Three cases were identified across the seven-year period; gestation ranged from early first to third trimester, all involving road traffic collisions. Injury severity scores ranged from 5 to 10 and all cases had good maternal outcomes.

In one case, early pregnancy was unrecognised until later in admission. The patient subsequently miscarried, though causality could not be established. For the two known pregnancies, pre-hospital alerts were activated and uterine displacement applied where indicated. CT was not performed or was delayed in both cases.

Obstetric review was timely at presentation, though ongoing ward review was limited. CMV positive blood was administered to one patient. TXA was administered in one case. MDT discussion informed management in two.

| | Case 1 | Case 2 | Case 3 |
|---|---|---|---|
| **Gestation** | **Early pregnancy** | **2nd trimester** | **3rd trimester** |
| **ISS** | **5** | **10** | **9** |
| **Pregnancy known at presentation** | **No** | **Yes** | **Yes** |
| **TXA** | **Not indicated** | **Yes** Given pre-hospital | **No** Indicated but not given |
| **Uterine displacement** | **Not indicated** <20 weeks | **Not documented** | **Yes** |
| **CT imaging** | **Performed** | **Not performed** Indicated but not performed | **Delayed** |
| **Blood products** | **Not required** | **Yes** CMV-positive blood given | **Not required** |
| **Obstetric review** | **No** Early pregnancy | **Yes** In ED and ongoing ward review | **Yes** In ED and ongoing ward review |

**3 cases** over 7 years

**All RTAs** mechanism of injury

**ISS 5–10** injury severity score

**2/3** CT not performed or delayed

**3/3** Maternal survival

## 4 DISCUSSION

Three cases over seven years reflects the rarity of this condition, which itself impedes expertise development. Obstetric review was generally timely, but decision-making did not consistently follow guidelines. Imaging was delayed or omitted in both known pregnancies despite guideline recommendations, and early pregnancy was missed on initial assessment in one case.

These findings point to a need for targeted training and improved guideline awareness. This review will serve as baseline data for a planned Scotland-wide evaluation.

## 5 LEARNING POINTS

- Consider HCG in all women of reproductive age at initial assessment
- Appropriate imaging should not be delayed or withheld on the basis of pregnancy
- Senior MDT discussion is essential in guiding management of these complex cases
- Major obstetric trauma is rare; clear national guidance is needed to support consistent management

## REFERENCES

1. Irving T, Menon R, Ciantar E. Trauma during pregnancy. BJA Education 2021;21(1):10–9. Doi: 10.1016/j.bjae.2020.08.005.

2. Demetriou C, Eardley W, Rebeiz M-C, Hing C. National variation in guidance for the management of pregnant women presenting with major trauma. The Annals of The Royal College of Surgeons of England 2024;106(6):528–33. Doi: 10.1308/rcsann.2024.0011.