# What to Expect When Your Patient is Expecting: An Analysis of Outcomes After Trauma in Obstetric Patients

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# Introduction

- 8.3% incidence of traumatic injury in pregnancy
  - 19%-Preterm labor
  - 27%-Risk of labor induction
- Traumatic injury in obstetric patients has been shown to correlate with adverse fetal outcomes, however most data predates modern resuscitation and imaging techniques.

# Methods

- Single center retrospective review at a Level 1 Trauma Center from 2010-2020.
- 1882 nonpregnany, child-bearing age women were compared to 775 pregnant patients
  - Data available for only 571 pregnant pts
- Demographics, injury characteristics, and obstetric data were collected.
- Categorical data were compared with Chi-square or Fisher's Exact Test and continuous data with Mann-Whitne U test. A p-value of 0.05 was considered statistically significant.
- Multivariate analysis was performed to determine risk factors for poor obstetric and fetal outcomes. Factors found on analysis to have an a priori p-value of <0.20 were then used to create a logistic regression analysis.

		No OB Complications	+OB Complications	
				p-value
	Age, years	27±5.64	25±5.72	0.297
	Caucasian Race	56.8%	49.2%	0.038
	Glasgow Coma Score 15	99.3%	97.5%	0.008
	Motor vehicle/Motorcycle collision Mechanism	50.8%	52.5%	
				0.45
	Mortality	0.2%	0.8%	0.382
	Discharge to home	98%	96.7%	0.057
	Hospital Length of Stay	1.24±1.34	1.45±2.49	0.001
	ICU Length of Stay	0.05±0.66	0.28±0.95	0.041
	Ventilator Days	0.01±0.14	0.23±0.65	0.002
	ISS	0.79±2.27	1.96±3.07	0.014
	ISS 0	66.6%	61.5%	0.292
	ISS 1-8	32.7%	35.2%	0.602
	ISS >/=9	1.1%	6.6%	0.001
	AIS Head	0.06	0.12	0.217
	AIS Face	0.08	0.05	0.482
	AIS Neck	0.02	0	0.382
	AIS Thorax	0.06	0.17	0.014
	AIS Abdomen	0.07	0.22	0.006
	AIS Spine	0.06	0.12	0.038
	AIS Upper Extremity	0.13	0.16	0.393
	AIS Lower Extremity	0.16	0.34	0.002
	AIS External	0.03	0.04	0.242
	Gestational Age, weeks	29±7.29	26±7.56	0.005
٠V	Time of Fetal Monitoring, hours	11.2±17.86	13.9±17.92	0.166
· у	Presentation Viable Pregnancy	75.7%	60.7%	0.001
	Presentation Term Pregnancy	17.4%	4.9%	0.001
	Spontaneous Abortion	0%	4.9%	0.001
	Fetal Demise	0%	3.3%	0.001
	Preterm Labor	0%	40.2%	0.001
	Placental Abruption	0%	15.6%	0.001
Э	Preterm, Premature Rupture of Membranes	0%	59%	
				0.001
	Low Birth Weight	1.6%	6.1%	0.001
	Abnormal Fetal Heart Monitoring	2.7%	9%	0.002
	Labor After Trauma	2.7%	4.1%	0.411

# Results

- Injury Severity Scores (ISS) were higher in nonpregnant patients (5 vs 0, p<0.001), with similar mortality (p=0.07).
- 558 (98%) injured pregnant patients had an ISS < 9
  - 368 (64%) had an ISS of 0
- 122 (21%) pregnant patients suffered obstetric or fetal complication
  - Complications had higher ISS (p< 0.001), higher abbreviated injury scales (AIS) for thorax, abdomen, spine, lower extremities (p<0.05), and lower gestational age (p=0.005).
  - 71 patients had ISS of 0
    - 70.4% PPROM
    - 9.9% placental abruption
    - 43.4% preterm labor
- Age, Glasgow Coma Score (GCS), AlS Abdomen and Lower Extremity, and preterm pregnancy were predictive of adverse outcomes.
- Non-caucasian race, higher gestational age, and term pregnancy were predictive of labor during admission.

### Conclusions

 Minor injury is a significant source of morbidity for pregnant trauma patients. Appropriate triage and monitoring after injury may help identify those in danger of adverse fetal outcomes.