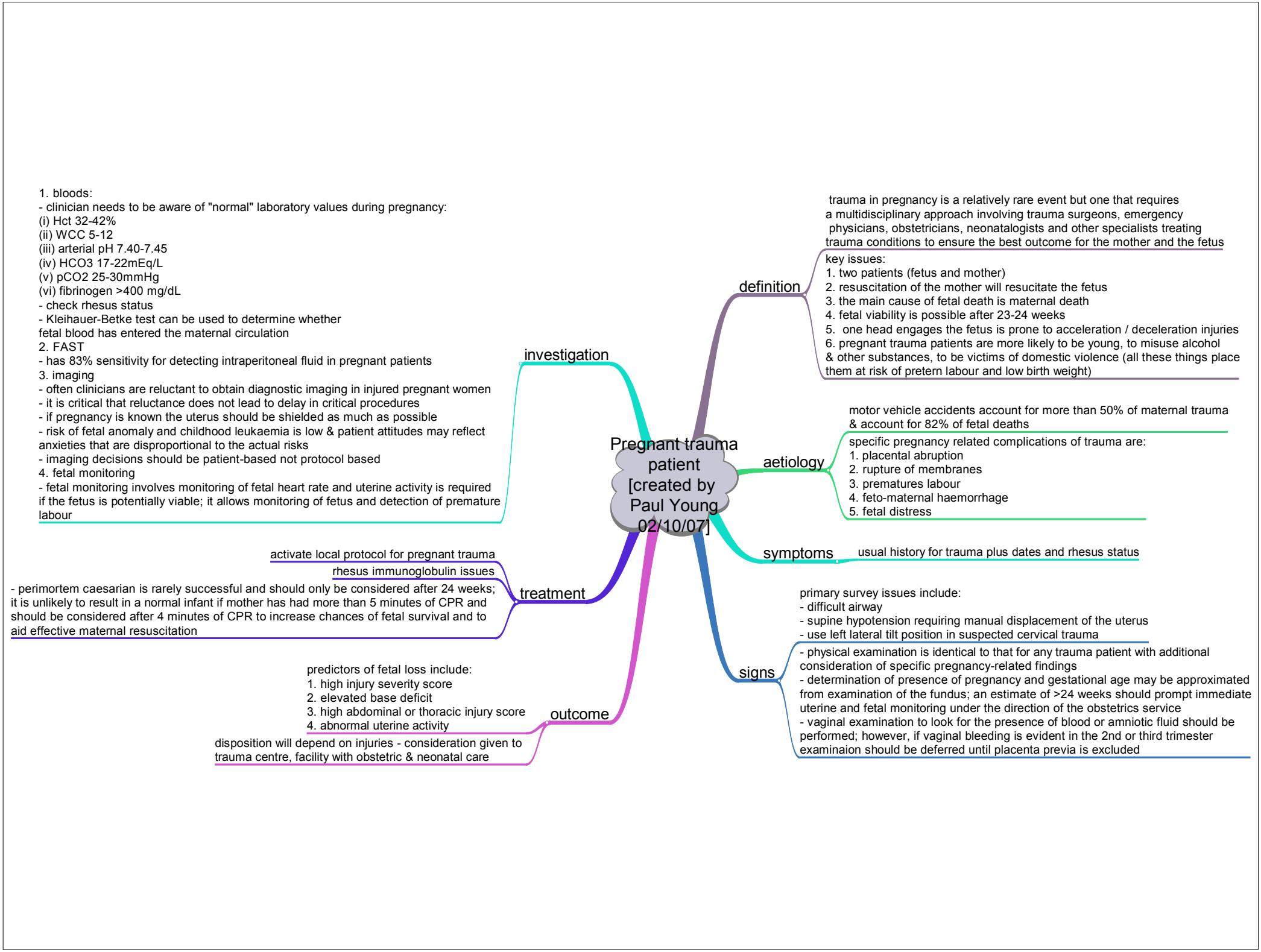
Pregnant trauma patient [created by Paul Young 02/10/07]
definition
trauma in pregnancy is a relatively rare event but one that requires a multidisciplinary approach involving trauma surgeons, emergency physicians, obstetricians, neonatalogists and other specialists treating trauma conditions to ensure the best outcome for the mother and the fetus
key issues:
1. two patients (fetus and mother)
2. resuscitation of the mother will resucitate the fetus
3. the main cause of fetal death is maternal death
4. fetal viability is possible after 23-24 weeks
5. one head engages the fetus is prone to acceleration / deceleration injuries
6. pregnant trauma patients are more likely to be young, to misuse alcohol & other substances, to be victims of domestic violence (all these things place them at risk of pretern labour and low birth weight)
aetiology
motor vehicle accidents account for more than 50% of maternal trauma & account for 82% of fetal deaths
specific pregnancy related complications of trauma are:
1. placental abruption
2. rupture of membranes
3. prematures labour
4. feto-maternal haemorrhage
5. fetal distress
symptoms
usual history for trauma plus dates and rhesus status
signs
primary survey issues include:
- difficult airway
- supine hypotension requiring manual displacement of the uterus
- use left lateral tilt position in suspected cervical trauma
- physical examination is identical to that for any trauma patient with additional consideration of specific pregnancy-related findings
- determination of presence of pregnancy and gestational age may be approximated from examination of the fundus; an estimate of >24 weeks should prompt immediate uterine and fetal monitoring under the direction of the obstetrics service
- vaginal examination to look for the presence of blood or amniotic fluid should be performed; however, if vaginal bleeding is evident in the 2nd or third trimester examinaion should be deferred until placenta previa is excluded
outcome
predictors of fetal loss include:
1. high injury severity score
2. elevated base deficit
3. high abdominal or thoracic injury score
4. abnormal uterine activity
disposition will depend on injuries - consideration given to trauma centre, facility with obstetric & neonatal care
treatment
activate local protocol for pregnant trauma
rhesus immunoglobulin issues
- perimortem caesarian is rarely successful and should only be considered after 24 weeks; it is unlikely to result in a normal infant if mother has had more than 5 minutes of CPR and should be considered after 4 minutes of CPR to increase chances of fetal survival and to aid effective maternal resuscitation
investigation
1. bloods:
- clinician needs to be aware of "normal" laboratory values during pregnancy:
(i) Hct 32-42%
(ii) WCC 5-12
(iii) arterial pH 7.40-7.45
(iv) HCO3 17-22mEq/L
(v) pCO2 25-30mmHg
(vi) fibrinogen >400 mg/dL
- check rhesus status
- Kleihauer-Betke test can be used to determine whether fetal blood has entered the maternal circulation
2. FAST
- has 83% sensitivity for detecting intraperitoneal fluid in pregnant patients
3. imaging
- often clinicians are reluctant to obtain diagnostic imaging in injured pregnant women
- it is critical that reluctance does not lead to delay in critical procedures
- if pregnancy is known the uterus should be shielded as much as possible
- risk of fetal anomaly and childhood leukaemia is low & patient attitudes may reflect anxieties that are disproportional to the actual risks
- imaging decisions should be patient-based not protocol based
4. fetal monitoring
- fetal monitoring involves monitoring of fetal heart rate and uterine activity is required if the fetus is potentially viable; it allows monitoring of fetus and detection of premature labour