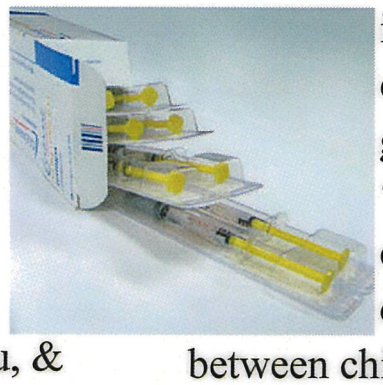
Anticoagulants during Pregnancy, Are they safe?

Is receiving low molecular weight heparin as a prophylactic, best evidence-based practice as a preventative measure of pregnancy-related venous thromboembolism?

Pregnant women are four to five times more likely to develop a venous thromboembolism than women of similar ages who are not pregnant, due to the hypercoaguable state of pregnancy (Harrington, 2013). Reports have shown that there is a small decline in overall maternal deaths, but PE is still the highest cause of mortality in this population.

Currently low molecular weight heparin (LMWH) is the anticoagulant of choice, due to lower risk of bleeding, lower risk of fracture due to thrombocytopenia and heparin-induced osteoporosis, the predictable pharmokinetics and not crossing over into the placenta (Diaconu, Balaceanu, & Bartos, 2013).



Implications

Although giving LMWH is currently best practice, there is not a lot of evidence to back up this practice. The 'best practice' is derived from the non-pregnant population (Middeldorp, 2013).

The optimal dose and duration of LMWH is controversial. As Heparin requirements increase throughout pregnancy, is working off the non-pregnant dosing strategy - 1mg/kg, going to give the best therapeutic effect? (American College of Obstetricians and Gynecologists, 2013)

Questions surrounding whether a once daily or twice daily regimen of LMWH should be preferred is another controversial issue. Observation studies have shown no increased risk of recurrence with a once daily regimen over the twice-daily regimen (ACOG, 2013).

There is an urgent need for evaluation of diagnostic strategies; currently there is a D-dimer test (blood test) used for non-pregnant women. D-dimer increases progressively over the pregnancy, considered normal according to gestation weeks are not yet universal. These 'normal values' would be beneficial, as concerns about the risk of fetal exposure to oncogenicity and teratogenicity, and the link between child cancer and radiation exposure in utero would be minimised (Middeldorp, 2013).

Risk Factors

Over 35 years of age

BMI classification as obese

Chronic medical conditions

Previous VTE with a family history

(McClure, Cooper, & Clutton-brock, 2011)

Recommendations

Further explore drug regimen: once daily vs twice-daily subcutaneous injection and optimal doses.

Develop a more efficient and standardized approach to monitor the anticoagulation effects of LMWH, and if monitoring is necessary.

Move from individual hospital protocol to a more standardized approach for prescribing LMWH.

Further exploration for best evidence-based practice in the pregnant population is needed.

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I have chosen to do a poster presentation for part B of my assignment - *Is receiving low molecular weight heparin as a prophylactic, best evidence-based practice as a preventative measure of pregnancy-related venous thromboembolism?* Developing a venous thromboembolism is something that we, as up and coming nurses need to be aware of, in whatever area of nursing that we are heading into. Pregnant women are not excluded from developing a VTE, and are actually at higher risk (Harrington, 2013). I feel that a poster presentation is more beneficial as it is something that all of the nursing school and visitors will see. Hopefully this will get them thinking about how we should advocate for our clients and help them to make informed decisions, before commencing any treatment that isn't fully tested, with regulations that are derived from the non-pregnant population and is up to each individual hospital to decide on prescribing protocol.

References

Harrington, D. (2013). Preventing and recognizing venous thromboembolism after obstetric and gynecologic surgery. *Nursing for Womens Health , 17* (4), 325-329.

P Population	Pregnant women in the high risk group of developing VTE	Women receive LMWH as a prophylactic if they have three or more of the following: thrombophilia, medical comorbities, age >35, obesity prepregnancy or early pregnancy, smoking, multiple pregnancy assisted with reproductive therapy, pre-eclampsia, c-section, immobility, long distance travel > 4 hours, systemic infection.
E Exposure	Women who received LMWH as a prophylactic	Looking for articles where women have received LMWH as a prophylaxtic or as treatment of a PE
C Comparison	Those who received other thromboprophylaxis	Comparing receiving a thrombolysis of a different type will help determine if LMWH as a prophylactic, or treatment is best practice
O Outcome	VTE prevention causing no fetal harm	Is giving LMWH best practice for the prevention of VTE development in pregnant women.
T Timeframe	N/A	

After using the PECOT model, I have formulated this question: *Is receiving low molecular weight heparin as a prophylactic, best evidence-based practice as a preventative measure of pregnancy-related venous thromboembolism?*