Government of Western Australia
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Women and Newborn Health Service

Evaluation of psychotropic medications and the incidence of Post-Partum Haemorrhage (PPH)

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1 Background

Postpartum haemorrhage (PPH) remains a significant obstetric medical complication, being one of the most common causes of maternal death[1].

Recent studies have demonstrated a significant association between PPH and women who were exposed to antidepressants during pregnancy[2].

A study by Grzeskowiak et al (2015) demonstrated a significant association in PPH and women who were exposed to antidepressants in pregnancy[4-5]. This is theorised to result by the changes of serotonin homeostasis in the body. Most antidepressants work by increasing serotonin (neurotransmitter) at synapses in the brain. Therefore this is theorised to deplete serotonin effects in platelets. Serotonin plays an integral role in platelet-endothelial cell interactions, aggregation and activation. Additionally questions were raised in regards to the risks associated with anti-psychotics as they also have some agonistics effects on serotonin receptors.

King Edward Memorial Hospital (KEMH) is a specialised obstetric hospital in Western Australia and it is important to assess this risk so that our guidelines might reflect the most up-to date information, especially considering that the rates of antidepressant and antipsychotic use during pregnancy are increasing[3, 6-8].

2 Aim

To investigate the association of PPH in women who take antidepressants and antipsychotics at KEMH.

3 Method

An audit tool was created to capture patients who had experienced a PPH ; and during pregnancy were taking either an antidepressant and/or an antipsychotic. Known risk factors were also captured for each patient according to current clinical guidelines. Blood loss volumes were recorded.
A similar cohort of women who experienced a PPH and were not taking any psychotropic medications was captured, with blood loss volume recorded for comparison.

3 Results

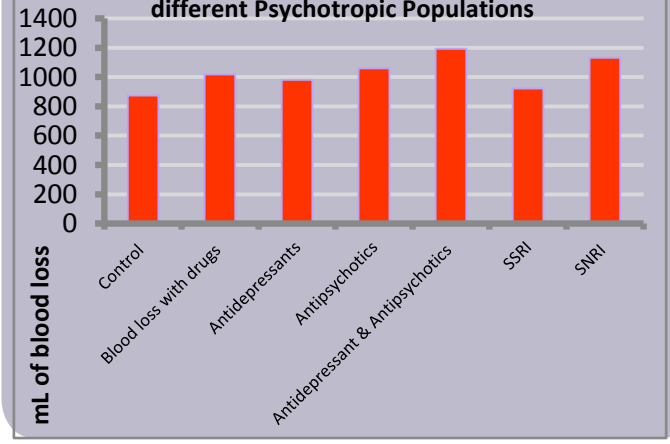
Data was collected for 200 women who had experienced a PPH. 100 were taking either an antidepressant or an antipsychotic or both, and 100 were not taking any psychotropic medications.
From the patients that experienced a PPH, 79% were taking an antidepressant during pregnancy, 13% were taking antipsychotics and 10% were taking both an antidepressant and antipsychotic. Patients taking antidepressants, 61% (n=55) were on SSRIs, 32% (n=29) were on SNRIs. Second generation antipsychotics were used in all patients taking antipsychotics.

The most common risk factors were caesarean section (n=48), induction/augmentation of labour (n=78) and exposure to oxytocin in labour (n=89) (see Figure 2.). The most common mode of birth was vaginal delivery (n=42), followed by non-elective lower uterine segment caesarean section (n=31) and elective lower uterine segment caesarean section (n= 27) respectively.

Average blood loss in the medicated population taking antidepressants, antipsychotics or both were 981.4mL, 1058.6mL and 1192.7mL respectively. Blood loss in the control was 873.8mL (see Figure 1.)
An Independent T test was conducted and demonstrated a significant difference between the control group and the group taking antidepressants/antipsychotics (p=0.039). A Pearson's correlation was conducted on the average blood loss and the total number of risk factors. No statistically linear relationship exists between these variables (p=0.079). Investigations were also conducted between groups taking SSRIs and SNRIs, an Independent T test revealed no significant difference between the control group (p=0.087).

Graph 1: Type of Psychotropic Medication

Graph 2: Average Blood Loss between different Psychotropic Populations



4 Conclusion

The results of this study demonstrate a statistically significant risk of PPH in the group of women taking antidepressants and/or antipsychotics. This finding supports recent studies and highlights the need for more investigation into the risks of antidepressant/antipsychotic use during pregnancy[5].
The risk of antipsychotics alone on the incidence of PPH requires further studies with a larger population size before conclusions can be made. However in light of this, clinicians should carefully consider the prescribing of antidepressants/antipsychotics during pregnancy, where other PPH risk factors are present.

5 References

World Health Organisation. WHO recommendations for the prevention and treatment of postpartum haemorrhage 2012
A. Henry, M. R. Birch, E. A. Sullivan, S. Katz, Y. A. Wang. Primary postpartum haemorrhage in an Australian tertiary hospital: a case-control study. Australian & New Zealand Journal of Obstetrics & Gynaecology [Research Support, Non-U.S. Gov't]. 45(3):233-6.
I. Petersen, R. L. McCrea, C. J. Sammon, D. P. Osborn, S. J. Evans, P. J. Cowen, et al. Risks and benefits of psychotropic medication in pregnancy: cohort studies based on UK electronic primary care health records. Health Technol Assess. 2016; 20(23):1-176. DOI:10.3310/hta20230.
L. E. Ross, S. Grigoriadis. Selected pregnancy and delivery outcomes after exposure to antidepressant medication. JAMA Psychiatry. 2014; 71(6):716-7. DOI:10.1001/jamapsychiatry.2014.59.
L. E. Grzeskowiak, R. McBain, G. A. Dekker, V. L. Clifton. Antidepressant use in late gestation and risk of postpartum haemorrhage: a retrospective cohort study. Bjog. 2016; 123(12):1929-1936. DOI:10.1111/1471-0528.13612.
E. Jimenez-Solem, J. T. Andersen, M. Petersen, K. Broedbaek, N. L. Andersen, C. Torp-Pedersen, et al. Prevalence of antidepressant use during pregnancy in Denmark, a nation-wide cohort study. PLoS One. 2013; 8(4):e63034. DOI:10.1371/journal.pone.0063034.
N. Byatt, K. M. Deligiannidis, M. P. Freeman. Antidepressant use in pregnancy: a critical review focused on risks and controversies. Acta Psychiatr Scand. 2013; 127(2):94-114. DOI:10.1111/acps.12042.
Y. Gadot, G. Koren. The use of antidepressants in pregnancy: focus on maternal risks. J Obstet Gynaecol Can. 2015; 37(1):56-63

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