Low dose Aspirin (LDA) in Obstetric Care

Low-dose aspirin is a key evidence-based strategy for preventing pre-eclampsia and related placental-mediated complications. It irreversibly inhibits platelet cyclo-oxygenase-1, reducing thromboxane A_2–mediated platelet aggregation and improving uteroplacental perfusion. This mechanism is particularly relevant in pregnancies where abnormal placental development is anticipated.

The ASPRE trial (Aspirin for Evidence-Based Pre-eclampsia Prevention by Rolnik et al., *NEJM*, 2017) demonstrated that aspirin 150 mg nightly, commenced before 16 weeks' gestation in women identified as high risk, reduced the incidence of preterm pre-eclampsia by 62%. Further systematic review and meta-analysis (Aspirin for the Prevention of Preterm and Term Preeclampsia by Roberge et al, AJOG, 2017) showed that Aspirin is most effective when started before 16 weeks, with diminished benefit if commenced later.

In Australia, RANZCOG recommends low-dose Aspirin (LDA) 150 mg daily for women at high risk of pre-eclampsia, ideally started between 12–16 weeks' gestation and continued until 36 weeks. High-risk groups include those with previous pre-eclampsia, multifoetal pregnancy, chronic hypertension, diabetes, renal disease, or autoimmune conditions.

Night-time dosing is preferred because it aligns with circadian platelet activity and blood pressure patterns, resulting in greater reduction in blood pressure and improved endothelial function compared with morning dosing (Hermida et al., *Hypertension*, 2012). This practice is now widely adopted in Australian and international obstetric units.

Low-dose Aspirin (LDA) is safe in pregnancy and does not increase major bleeding risk. Its routine use in high-risk pregnancies is supported by strong international evidence and Australian practice as a highly effective, low-cost preventive strategy.

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