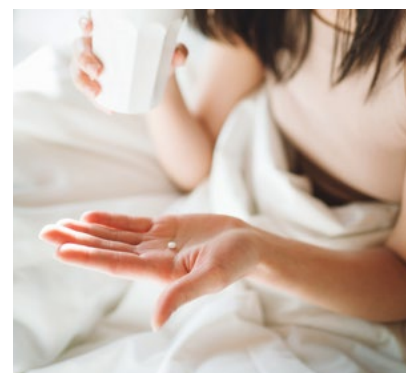


Indications for commencing aspirin for the prevention of pregnancy-induced hypertension and pre-eclampsia spectrum disorders



CPD

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HYPERTENSIVE DISORDERS of pregnancy are a leading cause of maternal, fetal and neonatal morbidity.¹ Furthermore, they are a leading cause of maternal mortality in countries with developing economies. Evidence suggests there is a reduction in the risk of pre-eclampsia toxaemia when low-dose aspirin (LDA) therapy is initiated in early pregnancy.² For women diagnosed with pregnancy-induced hypertension, the risk of recurrence is 20% in subsequent pregnancies. Additionally, this risk increases significantly for women diagnosed with pre-eclampsia requiring delivery before 37 weeks' gestation.¹ The indications for starting LDA for prevention of pre-eclampsia are based on the presence of at least one high-risk factor, or two or more moderate-risk factors (Table 1).

The pathophysiology of pre-eclampsia is not fully understood; however, it may be attributed to suboptimal trophoblast invasion during placental formation, which leads to an imbalance of angiogenic and antiangiogenic factors causing endothelial damage and widespread inflammation. Aspirin is a nonsteroidal anti-inflammatory drug (NSAID) and primarily acts by inhibiting cyclooxygenase isoenzymes

(COX-1 and COX-2) at different dosages. At lower dosages it irreversibly inhibits COX-1, decreasing the platelet synthesis of a vasoconstrictive product of thromboxane A2 without affecting the vascular wall production of vasodilatory substance of prostacyclin.

According to the current best evidence, aspirin 100–150 mg daily

is recommended for high-risk groups, ideally before 16 weeks' gestation and as early as 12 weeks' gestation,^{1,3–5} and number needed to treat is approximately 42–70, relative risk: 0.76 (95% confidence interval: 0.62, 0.95).^{6,7} The 2014 Society of Obstetric Medicine of Australia and New Zealand guideline for the management of hypertensive

Table 1. Clinical risk assessment for pre-eclampsia

High risk factors*	Moderate risk factors*
Previous pregnancy complicated with hypertension, pre-eclampsia spectrum disorders or HELLP syndrome ^{1,3,9}	Primigravida ^{1,9}
Multifetal gestation ⁹	Age ≥40 years ¹ Age ≥35 years ⁹
Chronic hypertension ^{1,3,9}	More than 10-year pregnancy interval ^{1,9}
Type 1 or 2 diabetes mellitus ^{1,3,9}	BMI >30 kg/m ² at first visit ⁹ BMI >35 kg/m ² at first visit ¹
Chronic kidney disease ^{1,3,9}	Family history of PET (mother or sister) ^{1,9}
Autoimmune disease (eg systemic lupus erythematosus, antiphospholipid syndrome, scleroderma) ^{1,3,9}	Low socioeconomic status Personal history of low birth weight Previous adverse pregnancy outcomes ⁹
Assisted conception with oocyte donation ³	Multifetal gestation ¹

*Recommend low-dose aspirin if the patient has at least one of the high-risk factors or two or more moderate-risk factors

BMI, body mass index; HELLP, haemolysis, elevated liver enzymes and low platelets

disorders of pregnancy, endorsed by Australasian Diabetes in Pregnancy Society, recommends LDA for women with moderate to high risk of pre-eclampsia spectrum disorders.⁸

Moreover, the American College of Obstetricians and Gynecologists (ACOG) and Society for Maternal and Fetal Medicine states that there is still some benefit if aspirin is commenced prior to 28 weeks' gestation.⁹ The National Institute for Health and Care Excellence and ACOG recommend prescribing LDA from 12 weeks' gestation until birth,¹ which supersedes their previous statement of continuing until 36 weeks' gestation, on the basis of new evidence.^{9,10} Continuation of LDA until birth has not been associated with an increase in haemorrhagic complications⁶ such as placental abruption or postpartum haemorrhage, nor is it a contraindication for regional anaesthesia.¹¹ Moreover, systematic reviews have not shown an increase in congenital anomalies, neonatal haemorrhage or premature ductal closure associated with LDA.⁶ Aspirin should be avoided for patients with a history of aspirin-exacerbated respiratory disease ('Samter's triad'), gastrointestinal bleeding, genitourinary bleeding, active peptic ulcer disease and/or hepatic dysfunction.¹²

Prophylactic LDA is not indicated for prevention of unexplained stillbirths or fetal growth restriction alone without other risk factors for pre-eclampsia.^{6,13} Cochrane and systematic reviews report that a low dose of daily calcium (500 mg) started in early pregnancy may reduce the risk of pre-eclampsia, especially for women at high risk and women with low dietary calcium intake.¹⁴ Supplements such as magnesium, vitamin C and vitamin E do not help prevent hypertensive disorders in pregnancy.^{1,3,9}

It has been observed in clinical practice that aspirin is often not commenced until later in pregnancy in Australia; that is, until the second or early third trimester when the patient is seen in secondary care by an obstetric specialist. This is contrary to evidence-based best practice. Further, we do understand if the general practitioners (GPs) experience some barriers to

early commencement of medicine for various reasons until the patient is seen by an obstetric specialist. However, we emphasise that GPs in Australia should consider and screen all pregnant women for risk factors of pre-eclampsia at early antenatal visits and commence aspirin early to achieve optimum results in preventing pre-eclampsia.

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