# The role of low-dose aspirin in the prevention of pre-eclampsia

Sir,

The role of low-dose aspirin in the prevention of pre-eclampsia has gained attention in recent time. Pre-eclampsia is a multi-systemic disorder characterised by hypertension of at least 140/90 mmHg recorded on two occasions at least 4-6 hours apart in the presence of proteinuria (≥0.3 mg protein in a 24-hour urine sample or ≥1 + using a dipstick) with or without oedema, arising *de novo* after the 20th week of gestation in a previously normotensive woman and resolving completely within 42 days post-partum.[1] For many years, researchers have sought to investigate the mechanism of this thrombohemostatic disease and the possible role of low-dose aspirin (LDA), a prostaglandin synthesis inhibitor, in the prevention of the disorder.

Pre-eclampsia has been associated with imbalance between vasodilating and vasoconstricting prostaglandins. This has led to the use of LDA, which inhibits thromboxane production more than prostacyclin production and therefore should protect against vasoconstriction and pathologic blood coagulation in the placenta.[2]

Trivedi in his meta-analysis revealed that LDA has a marginal effect in the prevention of pre-eclampsia in high-risk pregnant women, however, it is ineffective in reducing the risk in the low-risk group.[3] His results are in concordance with some previous studies, however, these contrast with the finding of Bujold *et al.,*[4] which showed a significant reduction in the development of pre-eclampsia following LDA in moderate to high-risk pregnant women when started at 16 weeks or earlier. This beneficial effect was lost when LDA was given after 16 weeks of gestation.

Conflicting reports makes the usefulness of LDA in preventing pre-eclampsia a controversial issue. However, some questions should be answered. What are the causes of the disparities in the findings reported by different researchers? What are the risks of using LDA?

First, different doses of aspirin were used as LDA. Different doses of LDA used include 50, 60, 75, 100 and 150 mg/day. Also, the onset of treatment has been shown to play a role in the prophylactic use of LDA in preventing pre-eclampsia. Treatments at 16th and 24th week of gestation have been documented to have a beneficial effect.[4] The time of treatment has also been shown to play a role. LDA at bedtime could provide greater benefits and pre-eclampsia prevention than when taken in the morning.[5]

Also, none of these studies has reported any significant side effect with the use of LDA. Weighing the benefits and risks, and with the medical maxim in mind – 'primum non nocere', LDA use in the prevention of pre-eclampsia should not be discouraged since there may be moderate benefit of LDA in preventing pre-eclampsia and because the risks of LDA are few.

Further studies comparing the use of LDA using different doses at different time of the day and commencing treatment at different stages of pregnancy would be of great value in postulating a standard regime for the prophylactic use of LDA in preventing pre-eclampsia.

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