ASA use in patients at risk of preeclampsia

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Clinical question

Is acetylsalicylic acid (ASA) effective in preventing complications in pregnant patients at risk of preeclampsia?

Bottom line

At about 12 to 28 weeks' gestation, low-dose (50 to 150 mg) ASA reduces absolute risk of preeclampsia by about 2%, perinatal death by about 0.5%, and preterm birth by about 2% compared with placebo. The absolute risk of postpartum hemorrhage is increased by up to about 1%. Low-dose ASA should be considered in pregnant patients at risk of preeclampsia.

Evidence

Seven systematic reviews (SRs) (17 to 77 RCTs; 26,952 to 46,568 patients) from the past 5 years compared ASA with placebo in pregnant patients at varying risk of preeclampsia.[1-7] Use of ASA was usually initiated at about 12 to 28 weeks' gestation and continued until delivery. Results are statistically significant unless indicated.

- Maternal outcomes
  - -Preeclampsia (5 SRs [16 to 60 RCTs])[1-5]: 4.5% to 9.6% versus 5.8% to 11.8% (placebo); number needed to treat (NNT) of 31 to 72.
  - -Placental abruption (3 SRs [9 to 29 RCTs])[1,3,4]: 0.9% to 1.3% versus 0.7% to 1.2% (placebo); not statistically different.
  - -Postpartum hemorrhage (>500 to 1000 mL blood loss) (4 SRs [9 to 19 RCTs])[1,3,4,6]: 3.7% to 15.2% versus 3.3% to 14.3% (placebo), number needed to harm (NNH) of 97 to 239; in 1 SR results were not statistically different.[4]
- Fetal outcomes
  - -Perinatal death (3 SRs [11 to 52 RCTs])[1,3,4]: 2.1% to 3.1% versus 2.7% to 3.5% (placebo); NNT=179 to 239.
  - -Preterm delivery or birth (2 SRs with comprehensive data [18 and 47 RCTs])[1,3]: 15.9% to 16.6% versus 17.5% to 18.5% (placebo); NNT=54 to 64.
  - -Fetal intracranial bleed (1 SR [6 RCTs])[4]: results were not statistically different.
- Limitations include inconsistent criteria for defining patients at risk of preeclampsia; infrequent reporting of serious maternal outcomes (eg, eclampsia, death); and some large RCTs were not included in all SRs.

Context

- No clear difference between 50 and 150 mg daily.[1,3-5,7]
- Earlier initiation (<16 to 20 weeks) may enhance preeclampsia benefit based on subgroup analyses. There were no consistent trends for other outcomes.[1-4,7]
- Sensitivity of clinical risk factors for predicting preeclampsia is less than 40%.[8]
- Guidelines vary: Common recommendations among guidelines for ASA use include, but are not limited to, any high-risk factors (eg, prior preeclampsia, chronic hypertension, renal or autoimmune disease, diabetes) or at least 2 moderate-risk factors (eg, nulliparity, age >35 to 40, previous adverse pregnancy outcome).
  - -Canadian: 81 to 162 mg daily preferably before 16 weeks' until 36 weeks' gestation.[8]
  - -American: 81 mg daily initiated between 12 to 28 weeks' gestation (optimally before 16 weeks) until delivery.[9]

Implementation

Although rates of serious bleeding events (eg, postpartum hemorrhage) were found to be low in SRs,[1,3,4,6] individual RCTs show an increased risk of vaginal spotting (NNH=14 to 20).[8] Additionally, observational data suggest a 0.06% increased risk of fetal intracranial bleeding with ASA.[10] However, causation cannot be determined and RCTs did not show an increased risk.[4] Lifestyle modifications continue to be important in preeclampsia risk factor management. Exercise (eg, 140 minutes weekly of moderate intensity) has been shown in RCTs to reduce risks of gestational hypertension and diabetes, as well as preeclampsia.[8]

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Competing interests
None declared

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