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Deleterious effects of maternal ingestion of cocoa upon fetal ductus arteriosus in late pregnancy.

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Author information

Abstract

Cocoa powder has twice more antioxidants than red wine and three times more than green tea. Ten percent of its weight is made up of flavonoids. Cocoa has antioxidant and anti-inflammatory effects by downregulating cyclooxygenase-2 receptors expression in the endothelium and enhancing nitric oxide bioavailability. There are evidences that while polyphenols ingestion have cardioprotective effects in the adult, it may have deleterious effect on the fetus if ingested by the mother on the third trimester of pregnancy, causing intrauterine fetal ductus arteriosus (DA) constriction. Polyphenols present in many foods and their anti-inflammatory and antinociceptive activities have been shown to be as or more powerful than those of indomethacin. These effects are dependent on the inhibition of modulation of the arachidonic acid and the synthesis of prostaglandins, especially E-2, which is responsible for fetal DA patency. So, we hypothesized that this same mechanism is responsible for the harmful effect of polyphenol-rich foods, such as cocoa, upon the fetal DA after maternal intake of such substances in the third trimester of pregnancy, thereby rising the perspective of a note of caution for pregnant women diet.

KEYWORDS: Cocoa; anti-inflammatory; antioxidant; ductal constriction; fetal ductus arteriosus; polyphenols; pregnancy

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