GLOSSARY

PROGESTERONE
A hormone that is thought to maintain pregnancy by suppressing uterine smooth-muscle activity; in humans, labor might be triggered by changes in progesterone receptor expression

Progesterone reduces risk of preterm birth—but outcome data are lacking

EBM

Preterm infants have a high risk of death and other complications, and it has been suggested that preventing or delaying early labor should lead to improved infant outcomes. PROGESTERONE therapy has shown some efficacy in reducing the risk of preterm birth, but little information exists on adverse effects and optimal timing, dosage, and route of administration.

A Cochrane meta-analysis of six randomized, placebo-controlled trials, involving 988 women, found that there was insufficient evidence for giving progesterone therapy to women at an elevated risk of preterm labor, because of the lack of data on the benefits and harm of such therapy. Progesterone therapy (five trials used intramuscular and one used intravaginal progesterone) did have beneficial effects, including prolonging the pregnancy: the relative risk of giving birth before 37 weeks of gestation for women given progesterone was 0.65 (95% CI 0.54–0.79). Infants of women given progesterone were less likely than those of women given placebo to have a birthweight below 2.50 kg (four trials, 763 infants; relative risk 0.63, 95% CI 0.49–0.81). It is not clear, however, whether prolonged pregnancy translates into better health outcomes.

Almost all the information on infant outcomes came from a single trial involving 459 babies, which was underpowered to detect clinically significant differences in neonatal outcomes. Additional trials that should help to address these questions are ongoing.

Caroline Barranco

Original article Dodd JM *et al.* (2006) Prenatal administration of progesterone for preventing preterm birth (Review). *The Cochrane Database of Systematic Reviews*, Issue 1, Art. No CD004947.pub2

Myocardial blood flow is increased by insulin

Coronary artery disease is the leading cause of death for patients with type 2 diabetes. Insulin has been shown to improve endothelial function, decrease ischemia, and stimulate blood flow, yet the effect of insulin on myocardial blood flow has not been studied in diabetic patients with coronary artery disease. A new Finnish study has investigated whether exogenous insulin increases myocardial blood flow in regions of compromised myocardial perfusion in this population, and also compared flow rates in ischemic versus nonischemic regions.

Ischemic regions were identified using single-photon emission CT, perfusion imaging, coronary angiography, and echocardiography. Following insulin infusion, myocardial blood flow was measured at rest and during adenosine-induced hyperemia in 43 patients, using PET and [^{15}O]-labeled H_2O. At rest, insulin infusion improved myocardial blood flow by 13% in ischemic regions and by 22% in nonischemic regions ($P = 0.043$ and $P = 0.003$, respectively). During hyperemia, it improved blood flow by 20% in ischemic regions and by 18% in nonischemic regions ($P = 0.018$ and $P = 0.045$, respectively). The researchers found that blood flow was lower in ischemic regions in both conditions (overall $P < 0.001$).

Previous studies have found that metabolic control of myocardial blood flow is reduced during adenosine stimulation, but that endothelial and neurogenic control is maintained. These results complement previous findings that insulin improves endothelial function in healthy subjects. The authors suggest that insulin infusion might result in a higher ischemic threshold.

Katherine Sole

Original article Lautamäki R *et al.* (2006) Insulin improves myocardial blood flow in patients with type 2 diabetes and coronary artery disease. *Diabetes* **55:** 511–516

Insulin-increasing diabetes therapies raise risk of death from cancer

Despite a known association between type 2 diabetes and cancer, and the fact that insulin is a growth-promoting hormone with mitogenic effects, very little is known about the effect of antidiabetic therapies on the risk of cancer. A Canadian team has conducted a retrospective, population-based cohort study of 10,309 people with diabetes, with information from the databases of Saskatchewan Health. They compared the cancer-related death rate of patients taking sulfonylureas (which increase insulin levels) with that of patients taking metformin (which does not increase insulin levels).