

Pregnancy associated with increased risk of heart attack

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Although acute myocardial infarction (AMI) is rare in women of child-bearing age, pregnancy can increase a woman's risk of heart attack 3- to 4-fold, according to a study published in the July 15, 2008, issue of the *Journal of the American College of Cardiology*. Since women today may delay having children until later in life, and advances in reproductive medicine enable older women to conceive, the occurrence of AMI associated with pregnancy is expected to increase.

The study, authored by Arie Roth, M.D., Tel Aviv University in Israel, and Uri Elkayam, M.D., University of Southern California (USC), is a follow up to their initial report released in 1995. The report is based on a review of 103 women with pregnancy-related AMI in the last decade and outlines key recommendations for the diagnosis and treatment of this condition in pregnant women that also considers the health and safety of the developing baby.

"It's extremely important that physicians who take care of women during pregnancy and after delivery be aware of the occasional occurrence of AMI in pregnancy and not overlook symptoms in these young patients," said Dr. Elkayam, who is a professor of Medicine and Obstetrics and Gynecology at USC. "Although many of the standard principles for diagnosing and treating AMI in non-pregnant patients also apply to pregnant women, two patients need to be treated—the mother and her baby—and the health status of both should play a major role in the selection of diagnostic and therapeutic strategies."

Some of the standard diagnostic tests and medications (e.g., ACE inhibitors, angiotensin II receptor blockers (ARBs) and warfarin) used to manage AMI can be harmful to the baby, whether in the womb or through breastfeeding; therefore, their use should take into account potential risks and benefits. There is also limited evidence about the efficacy and safety of other commonly used drugs such as thrombolytic and antiplatelet therapy and devices such as drug-eluting stents, mainly because pregnant patients are routinely excluded from clinical trials.

"The good news is that we've seen a significant drop in maternal deaths related to AMI during and immediately following pregnancy in the last decade," said Dr. Elkayam. "Our initial report indicated a mortality rate of 20 percent, and nearly 40 percent was reported by other studies. In contrast, the new data suggest that only 5 percent to 10 percent of expectant and new mothers who have a heart attack die as a result."

The authors attribute this improvement to increased awareness, more aggressive clinical approaches to treating AMI in general, including standardized hospital protocols for screening and diagnosis, as well as the application of these approaches to pregnant women.

"Interestingly, the mechanism of AMI is somewhat different when it occurs in association with pregnancy. One in four women had a weakening and separation of the walls of the coronary arteries (coronary dissection), which is a rare cause of heart attack in the general population," explains Dr. Elkayam. "Another 13 percent had normal coronary arteries. These findings signify the need to establish the cause of AMI in pregnancy in order to decide on appropriate therapy."

At the same time, many patients reported standard risk factors for AMI, including smoking (45 percent), high cholesterol (24 percent), family history of heart attack (22 percent), high blood pressure (15 percent) and diabetes (11percent). These findings indicate that such risk factors are

important even at younger ages and should be diagnosed early and treated aggressively.

Those who experienced AMI within 24 hours before or after delivery are twice as likely to die from heart attack as those who have a cardiac event before labor or postpartum (24 hours to three months after delivery). Overall, the majority of patients with stable AMI had a vaginal delivery, meaning that cesarean section should not be an automatic indication in patients who are stable, according to Dr. Elkayam.

This study is based on an extensive and systematic review of 103 cases of pregnancy-related AMI during the last decade, and compared them to 125 cases diagnosed prior to that time. Patients' ages ranged from 19 to 44 years, and older maternal age was shown to be a risk factor. The majority of patients (72 percent) were older than 30 years, and one in four was older than 35 years of age.

"We felt it was important to reexamine the literature about AMI related to pregnancy and provide updated recommendations for the diagnosis and management of heart attack in this group of women," said Dr. Elkayam. "It's been encouraging to see improvements in patient outcomes over the last 10 years, and we hope the guidelines presented in this paper will further increase awareness about AMI in pregnancy."

Source: American College of Cardiology

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