

Acute Myocardial Infarction and its Considerations during Pregnancy

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DESCRIPTION

Myocardial infarction complicating gestation is an important cause of maternal morbidity and mortality. The existence of diabetes, hypertension, and delayed age at gestation is anticipated to increase the commonness of myocardial infarction during gestation. Medical treatment with antiplatelet and antithrombotic agents is important, and mother fetal care specialists must be familiar. Acute myocardial infarction (MI) may take place during gestation and lead to significant morbidity and mortality to both the mother and the fetus. The adverse reactions of women postponing gestation until more advanced ages, the obesity epidemic, and a high frequency of chronic hypertension and diabetes (as a result of more advanced maternal age and higher body mass index) makes MI a more common condition during gestation compared with decades ago.

The 2 most common causes of maternal deaths from cardiac origin include aortic dissection and MI. Either, the risk of MI is increased by a factor of 3 to 4 during pregnancy and postpartum compared with age matched non-pregnant people. The controlling of MI is likely explained by the hypercoagulable state of pregnancy. The most common cause of MI is the rupture of an atherosclerotic plaque with platelet aggregation leading to acute coronary occlusion. Partial occlusion leads to a non-elevated ST-segment MI, whereas complete occlusion causes an ST-segment elevation MI.

TREATMENT

Assuring the presence of a patent airway and maintaining hemodynamic and rhythm stability are the first steps in treatment. Oxygen Administration is a common procedure. Sublingual nitroglycerin, morphine sulphate, or intravenous nitroglycerine can be used to alleviate persistent chest pain. In the case of a right ventricular infarction, nitroglycerine should not be used since its tendency to generate substantial vasodilation can limit preload. Nitroglycerin dilates coronary

arteries, lowering preload and afterload, and lowering oxygen consumption as a result.

If sublingual nitroglycerin fails to work, intravenous nitroglycerin may be used. Morphine sulphate reduces pain and anxiety while simultaneously increasing vasodilation and decreasing preload. Recent data have raised questions about the safety of morphine in the setting of a non-ST MI due to hypotension associated with its use, and morphine's use in patients with a non-ST MI has been downgraded to a class IIA recommendation.

PREGNANCY CONSIDERATIONS

The main concepts of MI care should not change during pregnancy in general. The use of ACE inhibitors, angiotensin receptor blockers, and statins are exceptions, as they have all been linked to foetal harm. PCI should not be postponed owing to worries about prenatal radiation if the patient requires it. To decrease the foetus' radiation exposure, abdominal shielding should be employed. The amount of radiation emitted during the operation is usually less than the American College of Obstetricians and Gynecologists' upper limit for acceptable radiation exposure during pregnancy (5 rads). Fluoroscopy time should be kept to a bare minimum.

It is recommended to evaluate the foetus with continuous electronic foetal monitoring in situations that arise after 24 weeks of gestation. At the levels used to achieve foetal lung maturity, no data on the effects of dexamethasone or betamethasone on myocardial recovery exists. Data from animal models has been contradictory. One study found that dexamethasone prevented cardiomyocyte apoptosis and reduced infarct size, whereas another found that dexamethasone increased infarcted area. If a very premature foetus needs to be delivered during the MI, using steroids to induce foetal lung maturity is a viable option.

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