BACKGROUND | RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE

Group A streptococcal infection can cause rheumatic fever (RF) progressing to rheumatic heart disease (RHD) in children and young people. RHD causes damage to the heart valves which leads to progressive heart failure, disability, and premature death. Women with heart valves damaged by RHD are at an increased risk of complications during pregnancy and delivery.

BACKGROUND | MATERNAL MORTALITY

The World Health Organization completed a systematic review of 60,799 maternal deaths in 2014. In developing countries, more than one in five maternal deaths were from indirect causes, most commonly exacerbation of pre-existing medical conditions. RHD is a significant cause of these indirect deaths.

RHD | EFFECTS ON MOTHERS

CARDIAC COLLAPSE

In late pregnancy, blood volume increases and heart rate rises. Normal heart function is needed to adapt to these changes and prepare for birth. In women with RHD, this capacity is limited by established heart failure or blood flow restricted by scarred (sclerotic) rheumatic heart valves.

Women with RHD are at risk of heart failure and arrhythmias during pregnancy. Signs and symptoms of heart failure are easily confused with late pregnancy: breathlessness, fatigue and swelling, and heart murmurs. Undiagnosed, catastrophic cardiovascular collapse can lead to maternal death.

EFFECTS OF ANTICOAGULATION

Women who have received metallic valve replacement require a lifetime of powerful anticoagulation to prevent blood clots forming and blocking the metallic valve. When pregnant women adhere to anticoagulants following metallic valve replacement, this dramatically increases the chance of bleeding during pregnancy and hemorrhage at the time of delivery.
BACKGROUND OF MATERNAL CARDIAC DISEASE
Women with symptomatic RHD do not have normally functioning hearts. This increases the risk of serious effects on developing babies including inter-uterine growth restriction, prematurity, and low birth weight.

EFFECTS OF ANTICOAGULATION
Warfarin anticoagulation is associated with very poor pregnancy outcomes including late pregnancy fetal loss in an estimated 10% of cases. Warfarin also causes serious developmental abnormalities in a large number of surviving infants.

MATERNAL DEATH
Infants who survive the death of their mother during, or shortly after, labor begin life with a social and biologic disadvantage. Maternal deaths from RHD therefore contribute to the intergenerational transfer of poverty which, in turn, predisposes to further RHD.

References