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HEART DISEASES AND PREGNANCY

THESIS

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INTRODUCTION

INTRODUCTION

In the eyes of the physician, pregnancy comes as a temporary complication in the disease process of the patient cardiac lesion, a process which in any case is likely to shorten life.

The question at issue is how to prevent, as far as possible the additional burden of the pregnant state from accelerating the rate of the patient's decline.

Fortunately, under good supervision, provided that the extra-demands of pregnancy are satisfactorily met at a time, it should generally be possible for the patient to merge from the experience of child birth without any degradation in her cardiac condition (Donald, 1979).

Normal pregnancy brings about profound changes in the cardiovascular system. Occasionally the physical signs produced in the cardio-vascular system by pregnancy may be so confusing even in the most skilled hands, that it is impossible to say whether or not the patient has organic heart disease. Barnes, 1974 considers that as many as 10% of women on whom a diagnosis of organic heart disease has been made during pregnancy are found to show no evidence of heart disease a month after delivery

(Mc Browne, 1978).

Gleicher et al., 1979, found 20% of patients originally thought to have rheumatic heart disease have none at all, following reassessment up to 30 years later (Micheal de Sweit, 1984).

From 1954 onwards, there has been a striking fall in the incidence of heart disease in developed countries, and the percentage of congenital heart rises in contrast to rheumatic heart percentage which tends to decline. This trend is lagging in developed countries (Barnes, 1974).

At least 90% of women with rheumatic valvular heart disease cause no anxiety to the physician, during their pregnancy, labour and puerperium, and almost all deaths would be preventable, were patients to attend hospital regularly from early pregnancy onwards.

However, in every large series there is bound to be some mortality since there will be always patients who present themselves for the first time late in pregnancy in cardiac failure (Barnes, 1974). This throws a major role on the importance of ante-natal care to anticipate, prevent complications, and manage if they occur rarely as it should be).

AIM OF THE WORK

There have been a previous study during the years 1972, 1973, 1974, to evaluate the present status of heart diseases complicating pregnancy in patients admitted to the obstetric department of AIN SHAMS University Hospital. a similar study was done in the same department and covered the years 1978 and 1979 with the same objectives.

Our aim in the present study is to continue the attempts of evaluation of the same problem in our department in the year 1981, 1982, 1983 with the object of evolution of our medical care in the interest of the health of the mother and outcome of her pregnancy.

MATERIAL AND METHOD

The maternal records of all patients diagnosed as heart cases and admitted to the obstetric department of AIN SHAMS University Hospital in the year 1981, 1982, 1983 were revised in a retrospective class.

The records were analysed for the following:-

1. The overall incidence of heart disease, complicating pregnancy, related to total admissions.
2. The aetiology of heart diseases.
3. The associated disease with the heart disease.
4. The valvular lesions and their relative incidence.
5. The incidence of heart failure .
6. The relative incidence of types of heart failure.
7. The effect of various factors on the incidence of heart failure:
 - Age.
 - Parity.
 - Period of gestation.
 - History of previous heart failure.
 - Dysrrhythias.
8. Maternal mortality.
9. Fetal outcome :

- Abortion.
- Preterm labour.
- Weight of live births.
- Perinatal mortality.

10. Time of termination.

11. Type of termination.

12. Period of hospitalization.

All results were analysed statistically as shown .

INCIDENCE OF CARDIAC DISEASES IN
PREGNANCY

Barnes, 1970 studied the incidence of rheumatic and congenital heart disease between 1947 and 1968 and found it just over 1% of all hospital deliveries. 88% of the cases were rheumatic and 12% were congenital in origin.

The studies of Szekely, 1974 showed that this incidence was 2% of all hospital deliveries and 85% were rheumatic in origin with a significant decrease in the incidence of chronic rheumatic heart disease from 3.5 % between 1942-1961 to 1.1 % between 1962-1971.

The position now is that rheumatic heart disease represents about 70% of all cardiac problems instead of the traditional 90% with a progressive rise in the incidence of congenital heart diseases (Donald, 1979).

In the developed countries, the incidence of rheumatic heart disease continued to decline reached 0.3% out of 1.5% the overall incidence of heart disease in pregnancy (20%) (DeSwilt and Fidler, 1981).

PHYSIOLOGICAL CIRCULATORY ADJUSTMENTS DURING NORMAL PREGNANCY

Changes in the cardiovascular system during a normal pregnancy are remarkable, so it is not surprising that certain maternal cardiac abnormalities are not well tolerated (John et al., 1982).

1. Sodium and water retention : -----

During pregnancy, there is an accumulation of salt and water without significant change in their absolute or relative concentration in maternal tissues or serum. The mean total body water accumulation is 8.5 l., nearly 6 l. of which is present in the fetus, placenta, amniotic fluid, uterus and maternal plasma, . The remainder is contained in the maternal extracellular spaces. To maintain sodium balance, 700-800 mEq of total exchangeable sodium is accumulated during pregnancy (Lindhimer and Weston, 1969).

2. Cardiac output (C.O.P.) -----

In pregnancy, the C.O.P. begins to increase as early as eighth week's gestation and reach maximum

at 24-28 week's gestation to reach the level of 40% above non pregnant levels. It remains elevated to this degree throughout the rest of pregnancy (Katz et al., 1978). But, (Hyttén and Leitch, 1971) had an opinion that, this increase begins within the first 10 weeks and reaches maximum before 12 th week.

C.O.P. increases by increase heart rate or stroke volume or both. In pregnancy the heart rate increases modestly 10% , therefore, most of the increase in C.O.P. is due to a significant increase in stroke volume (Metcalfé and Uland, 1974), But it is sensitive to changes in position which affect venous return to the heart. A concomitant decrease in peripheral resistance accompanies the increased C.O.P. to maintain normal peripheral blood pressure during pregnancy (Hyttén and Lietch, 1971).

3. Blood Volume :

Blood volume begins to increase as early as sixth week after conception, approaches its maximum in the second trimester and approximates one and one-half times normal by the time of delivery . It changes from 3.250 L. in the non pregnant state to 4.820 L. in the pregnant one (Chesley, 1972).