

A STUDY ON ENDOCRINE DISORDERS ASSOCIATED WITH RECURRENT MISCARRIAGES

ANITHA A. ● JYOTHI A. ● KUSUMA KUMARI C ● SADHANI M D ● REDDY P P

SUMMARY

Blood glucose and serum thyroid hormones (T3 and T4) levels were estimated in women experiencing recurrent miscarriages. Of the 175 women investigated 5(2.8%) were found to have increased glucose levels whereas of the 60 selected women tested for thyroid dysfunction none of them revealed hypo or hyperthyroidism. This study further confirmed that the true contribution of a thyroid problem and Diabetes mellitus in women with recurrent miscarriages remains to be extremely small.

INTRODUCTION

Of all the proposed causes of recurrent spontaneous miscarriages endocrine factors are among the most controversial although they have been implicated as a cause of infertility. The true contribution of a specific hormonal

aberration as a primary cause of recurrent spontaneous miscarriages is not yet clearly established.

Uncontrolled diabetes mellitus has been associated with an increased rate of abortions (Wayne 1986). However in a study by Crane and Wahl (1981) no such correlation was observed. Hypothyroidism has been reported to cause infertility and increased rate of fetal loss (Moghissi 1982). Animal

*Dept. of Cytogenetics, Hospital for Genetic Diseases
Begumpet, Hyderabad.*

studies have also shown that there is an increased incidence of pregnancy wastage in hypothyroid animals. However studies by Montoro et al (1981) on hypothyroid women failed to show an increase in the fetal loss. The present study was therefore aimed to understand the contribution of these two specific hormonal disorders to recurrent spontaneous abortions.

MATERIALS AND METHODS

One hundred and seventy five women with a previous history of two or more first or second trimester miscarriages were included in the study. Clinical examination of the subjects was carried out and the data pertaining to age, occupation, religion, exposure to chemicals if any and reproductive histories were recorded in a standard proforma. Random blood glucose levels were estimated by the glucose oxidase/peroxidase method using the kit supplied by Stangen

(Hyderabad). Serum triiodothyronine (T3) and serum thyroxine levels (T4) were estimated in 60 women experiencing recurrent miscarriages and in 20 control subjects with normal pregnancy outcomes. Blood samples were collected and the sera were separated and stored at -20°C until analysis. The T3 and T4 levels were estimated using the RIAK-4A and RIAK-5A kit supplied by BARC (Bombay).

RESULTS

The blood glucose and the serum thyroid hormones (T3 and T4) levels estimated in the women experiencing recurrent miscarriages and in control subjects are presented in Tables I and II.

Elevated blood glucose levels (>150mg%) were found in 5 women (2.86%) out of 175 women investigated (Table I). The T3 levels were found to be within the normal range (70ng/ml-200ng/

TABLE I
BLOOD GLUCOSE LEVELS IN WOMEN WITH
REPEATED ABORTIONS.

Sl. No.	Range (mg%)	Women with R.A.	
		No.	%
1	70-150 (Normal range)	170	97.14
2	> 150	5	2.86

R.A. - Repeated abortions

TABLE 2
SERUM TRIIODOTHYRONINE (T3) AND SERUM
THYROXINE (T4) LEVELS IN WOMEN EXPERIENCING
REPEATED ABORTIONS AND CONTROL SUBJECTS

Type	No. of cases	Serum Thyroid hormones	
		T3 Mean \pm SD	T4 Mean \pm SD
Women with repeated abortions	60	124.16 \pm 27.38	8.55 \pm 2.17
Controls (women with normal pregnancy outcomes)	20	132.50 \pm 38.23	7.67 \pm 2.28

(P > 0.05)

ml) in the study group. The mean T3 levels were 124.16 + 27.38 in the study group and 132.50 + 38.23 in the control group. The difference in T3 levels between the control and study groups was found to be statistically insignificant (Table II).

The T4 levels of the study and control groups were also found to be within the normal range (5-12ug/dl). The mean T4 level was 8.55 + 2.17 in the study group and 7.67 + 2.28 in the control group. Statistical analysis comparing the mean levels of the study and control groups showed no significance (Table II).

DISCUSSION

Endocrinologic disorders have been a matter of great discussion as to their diagnosis, their frequencies and their role

in spontaneous abortions. None of the 60 women tested for thyroid dysfunction showed hypo or hyperthyroidism. In all the women of the study group, T3 and T4 levels were well within the normal range (P>0.05, Table III). This observation is well in accordance with the reports that showed no evidence of thyroid disease in women evaluated for recurrent pregnancy loss (Daniel 1993, Harger et al 1983). Some workers have reported a low incidence of thyroid dysfunction in women with repeated abortions. A study by Maija et al (1993) revealed moderate hypothyroxinemia in only 1 out of 63 women. Another study by Babill and Sverre (1984) on 1995 women with recurrent abortions showed moderate hypothyroxinemia in 3 women and thyrotoxicosis in 1 woman, however in the absence of controls, the significance

of this finding is arguable. In another study, Leo et al (1992) revealed 8% hypothyroidism in women with repeated abortions but their study also lacked controls.

It has been well established that in uncontrolled diabetic women there is a two to three fold higher rate of spontaneous abortions than in the general population of women (Whittaker et al 1982, Miodovnik et al 1985, Wayne 1986, Daniel 1993). According to some studies (Wayne 1986, Coulam and Stern 1994) it was suggested that routine testing for glucose intolerance is necessary for patients with unexplained second trimester abortions or third trimester fetal deaths.

In the study of 175 women, 5 (2.8%) were found to have increased sugar levels (diabetes mellitus) (Table I). The reproductive history of these women showed that all the women experienced first trimester abortions and in addition second trimester abortions occurred in 2 women.

However, there is no data to support the role of subclinical or adequately controlled diabetes mellitus in cases of pregnancy wastage (Mills et al 1988, Crane and Wahl 1981, Babill and Sverre 1984).

CONCLUSION

Thus the true contribution of thyroid

problem and diabetes mellitus in women with recurrent miscarriages remains to be extremely small. However the routine assessment of thyroid function and blood glucose levels is needed in the evaluation of recurrent spontaneous miscarriages, so that a timely diagnosis can decrease the incidence of fetal loss.

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