T AND B LYMPHOCYTES AND IMMUNOGLOBULIN PROFILE IN VARIOUS INFECTIONS DURING PREGNANCY

by

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The immunologial variations of normal pregnancy are well established. All these immune reactions are mediated by cellular and humoral immunity. Finn *et al* (1972) have stated that there could be a central suppression of T cells in pregnancy with proportionate increase in B cells. They postulated that the occasional spreading of neoplasm or lethal viral infections occurring in pregnancy is the price that has to be paid for the reduction in cell mediated immunity. Hill *et al* (1973) suggested that the number of T cells have decreased in pregnancy and the number of B cells should be increased in order to protect against bacterial infections keeping in mind the altered immune response in normal pregnancy and increased incidence of infection during pregnancy. We have studied the T and B lymphocytes and various immunoglobulin profile in pregnancy with various infections.

Material and Methods

The study constitutes 25 healthy pregnant females in third trimester as control and 25 patients with various infections (bacterial, viral and fungal) in third trimester of pregnancy.

Datailed History

Clinical examination and necessary routine investigations were done (including vaginal swab culture and hanging drop smear of vaginal discharge). The following is the account of special tests employed to assess immunocompetance in these cases.

1. Peripherial lymphocyte count (PLC) was calculated with the help of total leucocyte count and differential lymphocyte count.
2. T lymphocyte studies (Jondel *et al* 1972).
3. Active T lymphocyte studies (West *et al*, 1977).
4. Immunoglobulin Assay by using tripartigen immunodiffusion plates Ig G, Ig A, Ig M (Mancini, *et al* 1965). The results of various parameters for cellular and humoral immunity in cases of various infections during pregnancy as compared to controls, were statistically analysed.

Observations and Discussion

This study comprises of 25 cases of various infections during third trimester of their pregnancy including fungal vaginitis

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(8 cases), trihomonal infection (4 cases), vulvitis (5 cases), bronchitis (1 case). recurrent sore throat (3 cases), urinary tract infection (3 cases), furunculosis (1 case).

25 cases of healthy third trimester normal pregnant females were taken as control.

The study of lymphocytes, including PLC, T cell % and T cell levels/cumm, in cases of pregnancy with infections were done and their findings were compared with control. In cases of pregnancy with infection the PLC shows no significant change ($P > .05$) while the T cell level and T cell % showed significant decrease ($P < .001$), showing depressed cell mediated immunity (Table I). The Ig G, Ig A and Ig M also showed a significant increase ($P < .001$) when compared to normal third trimester pregnancy, showing increased humoral immunity (Table II). Our findings are in accordance with Chandra *et al* (1976) who observed depressed humoral immunity in cases of pregnancy with infections.

A deficiency in maternal immunological competence during pregnancy was also reported by the increased incidence of rubella infection by Thong *et al* (1973), Herpes Virus by Nahimias *et al* (1971), Influenza by Greenberg *et al* (1958) and Hepatitis by D'Cruz *et al* (1968).

Conclusions

Following conclusions were drawn from the above study.

1. In case of infections associated with pregnancy in third trimester, though the

TABLE I

Study of Lymphocyte in Normal Pregnancy vs. Infection

Particulars	No. of cases	P.L.C.	T cell %	T cell level/ cumm
1. *Normal Pregnant* (Third Trimester control	25	R = 2200-2832 SD = 127.37	44-68 5.58	1117.6-1863 69.70
2. *Various Infections during Pregnancy* (Third Trimester)	25	R = 2420-2790 SD = 173.88 t = 0.24 P > .05	30-44 6.32 t=4.78 P<.001	789-1171.8 161.29 t = 4.29 P<.001

TABLE II

Study of Immunoglobulins in Normal Pregnancy vs. Infection

Particulars	No. of cases	Ig Gmg./100 ml	Ig Amg/100 ml	Ig Mmg/100 ml
1. *Normal Pregnant* (Third Trimester) control	25	R = 800-1040 SD = 68.73	146-180 12.88	218-353 50.50
2. *Various Infections during Pregnancy* (Third Trimester	25	R = 1354-1529 SD = 76.12 t = 15.11 P <.001	182-204 9.59 t=6.10 P<.001	289-324 15.41 t=4.33 P<.001

PLC showed no significant ($P > .05$) increase but the T cell values were significantly decreased ($P < .001$).

2. The levels of Ig G, Ig A, and Ig M was significantly increased ($P < .001$) showing that the humoral immunity is increased.

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