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Magnesium was long considered as a microelement with an intermediate biochemical and physiological role. Leroy (1926) considered it to be essential for growth and maintenance of life. The plasma magnesium is maintained within very narrow limits and during the rapid formation of new tissues, the magnesium requirement goes up.

Present study was conducted to see the serum magnesium changes in different types of abortion and preterm labour in comparison to nonpregnant and different trimesters of pregnant cases.

Difference in the serum magnesium levels in normal pregnant (II and III trimester) and nonpregnant cases found to statistically significant $p \leq 0.01$. There was no any significant difference in serum magnesium values in non-pregnant and in first trimester of pregnancy. But mean values showed a gradual fall in second and third trimester of pregnancy. The decrease has been greater from first to second trimester as compared to that from second to third trimester. However the difference in serum magnesium values in first and second and first and third trimesters have been statistically significant, $p \leq 0.01$. 
Our findings have also been supported by number of workers who have also reported a gradual fall in different stages of pregnancy as have found lower serum magnesium values in pregnancy. (Rosner and Gorfien, 1968; Dawson et al, 1969; Lim et al, 1969; Singh et al, 1979).

Hoffman et al (1937) have reported a fall during pregnancy which was more prominent around 3rd, 5th and 8th months of pregnancy. Zutshi (1966) reported an increase in the serum magnesium levels in pregnancy as compared with non pregnant controls.

Diversity of serum magnesium levels recorded for normal pregnancy ranged from 0.9-2.8 mg% (Table IIIa). Fall of serum magnesium levels in normal pregnancy is due to hypovolemia of pregnancy (Lim et al, 1969). A further decrease levels of serum magnesium found as pregnancy advances may be due to increased demand by growing foetus (Lim et al, 1969). Rizvi et al (1979) attributed it due to increased loss of magnesium ions to consume calcium ions. Dawson et al (1969) found increased demand of copper replaces the magnesium ions from blood so as to cause a decline in serum magnesium level.

In present study, no significant correlation could be observed between age, parity and serum magnesium level.
Achari et al (1961) did not find any significant difference in level of serum magnesium in nonpregnant and pregnant groups. Olatunposum et al (1975), Dejorge et al (1965) attributed to haemodilution occurring during pregnancy, while Simpson and Dale (1972) consider it to be the effect of oestrogen.

The mean serum magnesium level in all types of abortion and preterm labour was lower than that of nonpregnant and first trimester of pregnancy group (1.00 ± 0.55 to 1.53 ± 0.54) which is in accordance with Dumont (1965), Dumont and Singh (1979).

In the present series, out of 80 abortion cases, 44 cases were having serum magnesium level below 1.2 mg%. Out of these 6 were of threatened abortion, 10 were of inevitable, 14 were of missed abortion and 14 were of habitual abortion group.

Dumont (1965) observed that in all the state of uterine hyper excitability (during labour of abortion) if there is decrease levels of serum magnesium, while Rasu et al (1966) found lower values in premature labour than mature labour.

In present study, low levels of serum magnesium was observed how it plays a role in eliopathogenesis of abortion and preterm labour is not clear.
Whether low magnesium level is the causative factor of abortion or its result, is not clear. It can be hypothesized that as magnesium acts on cell energy, deficiency may result in blighted ova. In animal studies it was seen that increase in calcium and decrease in magnesium results in uterine contraction (Kochman, 1921). Oxytoxic efforts of ergot and histamine were depressed by increase magnesium ions (Frazer, 1939), when animals were Fed by keeping them in low magnesium diet, this resulted in low fertility, abortion, malformed/IVGL babies (Cosla, 1950 and Hurley, 1976).

Mean serum magnesium level in 20 patients with preterm labour was 1.00 mg% ± 0.40. Six of these patients presented in the second trimester and their mean value was 1.01 ± 0.40 mg%. Fourteen patients presented in the third trimester and their mean magnesium level was 1.00 mg% ± 0.52.

As is obvious from Table X magnesium level in preterm labour were significantly lower than levels in the nonpregnant as well as in normal pregnancy, in both second and third trimesters.

Serum magnesium level was seen to rise with rising haemoglobin levels. The associated hypoproteinaemia with decreased magnesium binding protein and subsequent movement of ions into the intracellular compartment may be the cause.
Our findings of hypomagnesemia in women with preterm labour are in agreement with the view of Pontis et al (1977), who believe that hypomagnesemia may play an etiological role in the onset of preterm labour.

Dumont and Bernard (1966) and Singh et al (1979) found lower level in women with abortions.

Pontis et al (1977) advise intake of magnesium to maintain serum magnesium levels between 1.5 - 3.5 mg%. Magnesium sulphate is being used with increasing frequency in treatment of preterm labour (Petric 1981, Miller 1982, Spisso et al 1982 and Valenzuela and Cline 1982).