Lymphocyte Reactivity in Pregnancy

SIR.—We were interested to read that Dr. Ronald Finn and others suggest in their paper (15 July, p. 150) that phytohaemagglutinin-induced lymphocyte transformation is reduced during pregnancy. Their results obtained using a morphological assay were supported by in vivo tuberculin test, and they apparently confirmed the results reported by Purtill, Hallgren, and Yunis who used 3H-thymidine uptake to measure lymphocyte transformation.

In this laboratory lymphocyte reactivity to phytohaemagglutinin (PHA) is assessed by measuring the rate of $^{3}H$-thymidine 2-deoxyuridine ($^{3}H$TDU) uptake into DNA. We have found that the serum of pregnant women frequently reduced the phytohaemagglutinin response of washed lymphocytes obtained from normal healthy donors when compared with normal human serum. Moreover, the inhibitory effect increased as pregnancy progresses and reaches a maximum at term (see Fig.). Maximum inhibition was observed on phytohaemagglutinin concentrations of 5-7 µg/ml culture, while at higher concentration (of phytohaemagglutinin than 15 µg/ml culture) the inhibition was overcome. Inhibition of lymphocyte reactivity by serum taken from mothers at the time of childbirth has been observed in one-way mixed leukocyte, vaccinia, and phytohaemagglutinin cultures.

Non-specific serum inhibition of the phytohaemagglutinin reactivity has been widely reported and in some cases the inhibitory substance has been identified—for example, an α globulin fraction in normal human serum. In pregnancy the increasing levels of circulating oestrogen and progesterone may result in an impaired phytohaemagglutinin response. Another possible inhibitory substance is α fetoprotein which also occurs with increasing concentration in maternal serum as pregnancy progresses.

It would be interesting to know whether the cases with greatest reduction of phytohaemagglutinin response in Dr. Finn’s study were from the later stages of pregnancy. We are, etc.,

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