

# The platelet count in pregnancy

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**SUMMARY** The platelet count was measured at approximately monthly intervals during the course of 44 normal pregnancies. There was no evidence of any fall in the platelet count during pregnancy. Any significant change in the platelet count in pregnant women is unlikely to be the result of a normal pregnancy.

It has recently been suggested that the platelet count decreases during the course of pregnancy and that this is particularly marked during the last trimester (Sejny *et al.*, 1975). We have investigated this suggestion by following the platelet count in the same group of women throughout pregnancy. Our findings show that during normal pregnancy the platelet count remains normal and does not change.

## Method

Forty-four haematologically normal women who attended the antenatal clinic within the first 14 weeks of pregnancy gave their fully informed consent to an investigation of their venous platelet counts during pregnancy. All the women were given ferrous sulphate supplements either at their first visit or when their haemoglobin concentration fell below 12 g/dl. In none of them did the haemoglobin concentration fall below 9.8 g/dl at any time during the pregnancy, and at term their haemoglobin concentrations were between 10.4 and 14.1 g/dl and their mean corpuscular volumes were between 82 and 102 fl. The pregnancies were all uncomplicated and produced normal healthy infants.

Five millilitres of venous blood collected in sequestrene was obtained from each woman at her first visit to the clinic and at approximately monthly intervals until term, giving a total of 290 samples from the 44 women. The platelet concentration in each sample was measured using a platelet Auto Counter (Technicon Instruments Ltd). This apparatus measures platelets in a whole blood sample without the need to prepare a platelet-rich and red-

cell-poor suspension. In our laboratory the coefficient of variation for this apparatus is 3.0% and the mean carryover is 1.6%. Quality control was maintained throughout the study by the cusum analysis of control samples of a stable latex particle suspension inserted after every 20 patient samples.

## Results

The mean platelet counts of the 44 women on their first visits and at each of their subsequent visits to the clinic are shown in the Table. There was no consistent change in the mean platelet count during the course of pregnancy and this was confirmed by an analysis of variance ( $F = 0.2$ ;  $P > 0.1$ ). Within the sequence of results for each woman there was, however, considerable variation. The mean coefficient of variation for each woman was 20%. In seven of the women the coefficient of variation exceeded 25% and in three it exceeded 30%.

## Discussion

The results presented here indicate that during 44 normal pregnancies the mothers' platelet counts showed no significant change. Moreover, at no

Table *The platelet count in 44 women during normal pregnancy*

<i>Duration of pregnancy (weeks)</i>	<i>Mean <math>\pm</math> SD platelet count <math>\times 10^9/l</math></i>
0-14	205 $\pm$ 61
15-18	193 $\pm$ 53
19-22	187 $\pm$ 39
23-26	197 $\pm$ 54
27-30	219 $\pm$ 62
31-34	207 $\pm$ 56
35-38	202 $\pm$ 58
39-40	211 $\pm$ 56

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stage of pregnancy did the mean platelet count differ significantly from the mean ( $\pm$ SD) count of  $185 (\pm 43) \times 10^9/l$  which we have found in 114 non-pregnant adult women. Although there was considerable variation in the platelet counts of the individual women, this was no greater than that seen in a similar number of men over the same period (Cavill, unpublished observations). This variation is not attributable to the apparatus and represents real changes in the circulating platelet concentration. The present results suggest that in practice the count in any one pregnant individual may be expected to vary by up to 20% either side of the mean value. Differences in successive platelet counts of less than this may have no pathological significance.

There is a striking difference between the pattern of platelet counts that we have seen and that reported by Sejeny *et al.* (1975). Although the methods differed in these two studies, it has been shown that the semiautomated and automated techniques give closely correlated results (Samama *et al.*, 1970) and we have confirmed this. The more likely cause of the difference is the way in

which the data were obtained at various stages in pregnancy. In the study of Sejeny *et al.* (1975) the data at each trimester were gathered from separate groups of women in whom the incidence of obstetric or haematological complications was not defined. These changes may well have been attributable to the different groups of women rather than to their stage of pregnancy. We were able to follow the same group of women at more frequent intervals throughout pregnancy. None of them showed a consistent trend in the platelet count and we therefore conclude that the platelet count during a normal pregnancy remains unchanged. Any significant change in the count in pregnant women should be attributed to some cause other than normal pregnancy.

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