

TOTAL LIVERPOOL EXPERIENCE

Combining the findings in the two hospitals offers a study of 111 cases of puerperal thromboembolism and of 641 control cases. The overall incidence of evident puerperal thromboembolism was 1.7 per 1,000 deliveries. The incidence by age, parity, mode of delivery, and lactation habit is shown in Tables VIII, IX, and X. Examination of these strengthens the conclusions drawn from the experience of the individual hospitals. They can be summarized as follows:

(1) The incidence of puerperal thromboembolism is three times higher in those women whose lactation is inhibited by administering ethinyloestradiol than in those who breast-feed their babies (3.4 as against 1.0 per 1,000). The difference is seen mostly among those who have an assisted delivery. The incidence is only doubled (2.1 compared with 0.9 per 1,000) when the delivery is spontaneous, but is increased six times (7.6 compared with 1.3 per 1,000) when the delivery is complicated.

(2) The incidence of thromboembolism rises with age irrespective of parity, mode of delivery, and lactation habit (Table X). It is especially high in women aged 35 or more. The rates are 1.0, 1.6, and 5.1 per 1,000 deliveries respectively for the three age groups under consideration.

(3) There is a slight suggestion of a rising risk with high parity, the respective incidences being 1.6, 1.5, and 2.5 per 1,000 deliveries for each parity group. This is more apparent in non-lactating women, but any association is probably indirect, being accounted for by concomitant advancing age.

(4) Of all the factors under consideration the most significant, as can be inferred from conclusion 1 (above), is mode of delivery. Thus in women less than 25 years of age, inhibition of lactation has no effect unless they have an assisted delivery, when the incidence is trebled. In young lactating women of low parity, operative intervention does not influence the incidence of thromboembolism, probably because the intervention is minor. In women aged more than 25, however, assisted delivery raises the incidence twofold if they are lactating, and almost sixfold if they are not. Indeed, the woman aged 35 or more, having had an assisted delivery, has a 10 times greater chance of thromboembolism if her lactation function is inhibited than if she breast-feeds her baby. In this respect it has to be recognized that the severity of the operative intervention, together with age and general condition, may determine the decision to inhibit lactation.

(5) The highest incidence of thromboembolism among women of low parity is seen in those who have an assisted delivery and who do not breast-feed. For parity groups 1, 2, and 3 combined the incidence in lactating women is 0.9 per 1,000 deliveries for normal delivery and 1.1 per 1,000 for assisted delivery; in non-lactating women the comparable figures are 1.6 and 7.3 per 1,000. If advancing age is added to the three factors already under consideration here, then the risk of puerperal thrombosis is probably very high (possibly 40-45 per 1,000), though the figures available to us are too small to be statistically significant.

DISCUSSION

The statistics on which this communication is based can be handled in several ways, each being attended by difficulties of one type or another. Irrespective of the approach, however, they confirm the overall conclusions of Daniel *et al.* (1967) to the effect that puerperal thromboembolism is seen more frequently among women in whom lactation is inhibited than among those who breast-feed their babies. But the difference between the two groups of patients is not so great in our series as was reported from Cardiff. For all women the incidence of thromboembolism was three times greater when they did not lactate. For low-parity women aged 25 and older inhibition of lactation was associated with a fourfold increased risk, whereas in Cardiff there was a tenfold increase. If the administration of oestrogens plays a direct part in predisposing the puerperal woman to thromboembolic episodes, it might be argued that the difference between the two centres could be attributed either to our employment of a much smaller dose of hormone for inhibiting lactation or to the use of ethinyloestradiol rather than stilboestrol.

The results of our study also differ from those in Cardiff in that they indicate that age, and especially mode of delivery, are of equal if not greater importance than inhibition of lactation in determining the risk of puerperal