Maternal Nutrition in Small-for-Dates Babies

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The Welsh Rhymney Valley, which has a homogeneous society with many diverse medical problems, shows a high incidence in small-for-dates (SFD) babies. Twelve patients were studied with SFD babies identified by computer selection, with 55 controls matched for parity and gestation. Those pregnancies shorter than 32 weeks and twin pregnancies were excluded because of the complexities involved in interpreting the various factors.

The following dietary profiles were estimated at booking clinic, namely, 16/52 gestation and also at 28/52, namely, midtrimester:

1. Vitamin E (α-tocopherol)
2. Carotene
3. Total cholesterol
4. Vitamin E (α-tocopherol)/total cholesterol
5. Vitamin B₁₂ (cobalamin)
6. Folic acid
7. Retinol

RESULTS

The correlation coefficient between values at the first and second visits showed good correlation except for vitamin E. Carotene levels (μg/liter) showed a significant difference between patients and controls, the levels for controls being twice those of the patients with small-for-dates babies at both visits, indicating a significant dietary deficiency. Further, overall levels of carotene are lower than the normal range, indicating a poor recent intake, although carotene levels are not generally considered an indication of total body store. The low levels of folic acid would also tend to confirm this finding. Cholesterol levels showed a huge increase ($p \ll 0.001$) between the
first and second visits—the mean cholesterol level at the second visit was higher by 40% in both patient and control groups.

The relationship of these parameters to socioeconomic and environmental influences has to be considered, as well as the effect of smoking. Thus, further studies of such patient groups need to be undertaken so that pre-pregnancy diet and pregnancy management can be properly planned.