They compared 15 "cot death" cases with 15 "controls." The ages of the cot death patients ranged from 11 days to 2 years, though most workers in this field agree that the sudden infant death syndrome probably does not occur more than 11 weeks of age. It is rare after 9 months. 1 Seven of the 15 control cases died within four days of birth, and since they may have been subject to postnatal respiratory problems they cannot be considered comparable with a typical cot death. It was stressed that no evidence of degeneration was found in the atrioventricular bundle. However, remoulding of the junction between the atrioventricular node and the bundle of His where it penetrates the central fibrous body, an area we term the ishium, does occur. 2 Furthermore, such remoulding is not present at birth but is apparent within 2-3 weeks. 1 Perhaps this remoulding of the atrioventricular conducting tissue is not apparent by the method of sectioning the heart described by Dr. Anderson and his colleagues, but it is easily seen if the complete heart is processed intact and serially sectioned. By this technique of Ferris and Maclennan, 3 the atrioventricular node receives its blood supply from the right coronary artery or the circumflex branch of the left and the His bundle from the anterior descending branch of the left coronary artery. It is interesting to note that this remoulding occurs at the junction of these separate blood supplies.

Haemorrhages were reported in both the cot death and control series. However, no cause of death was given in the control series, and since we contend that petechial haemorrhages in the heart occur in death associated with terminal hypoxia and a rapid change in intrathoracic tension it is important that any terminal hypoxic episode should be recorded. There is much evidence in favour of an acute respiratory death associated with asphyxia in some cot deaths. In a partly completed study of 38 cot deaths and 30 control cases we have found petechial haemorrhages in the hearts of 18 of the cot death cases and in only two of the control cases. One of the control cases with cardiac haemorrhages died from massive inhalation of vomit and the other from acute myocarditis. In a series reported by Ferris, 4 haemorrhages were found within the atrial wall, and with histological identification of internodal tracts is disputed there is considerable physiological evidence for the existence of such tracts. 5 Haemorrhages close to these tracts may be an important factor in the failure to survive in cases of what might otherwise be acute recoverable hypoxia.

In one of the cases illustrated by Dr. Anderson and others (their fig. 2) there was a histial and septal sectioned by foetal technique by cardiac massage. The illustration of the atrioventricular node shows abnormal vascularity and an unusual pattern of nodal tissue similar to that seen in hypertrophic cardiomyopathy. 6 In this case the nodal haemorrhage may be due either to hypoxia associated with cardiac arrest or to direct trauma. We think that the presence of cardiac petechial haemorrhages in the sudden infant death syndrome supports the view that these infants die during an acute hypoxic episode and that haemorrhages in the conducting tissue structures probably prevent survival.—We are, etc.,

JAMES A. J. FERRIS
S. R. KENDEE

Department of Pathology,
University of Newcastle upon Tyne


Skin Reactions to Practolol

Sr,—I have read with interest the letter from Drs. R. H. Felix and F. A. Ive (11 May, p. 333) since I am at present preparing for publication the details of a group of patients who have presented with skin reactions and eye signs following treatment with practolol.

The skin eruptions have tended to be of pruritic form and the eye symptoms and signs have either developed with the skin eruption or have followed it. The usual finding has been a shrinkage of the conjunctiva with some xerosis. The shrinkage has atypical features and is unlike the conjunctival scarring seen in association with either erythema multiforme or benign mucous membrane pemphigoid. It seems probable that patients on long-term medication with practolol who develop skin eruptions should also have a careful ophthalmic examination.—I am, etc.,

PETER WRIGHT
London N.W.1

Vitamin A, Pregnancy, and Oral Contraceptives

Sr,—Mrs. Jennifer Wild and her colleagues (12 January, p. 57) have joined Briggs et al. 1 in confirming our original findings that the serum vitamin A levels are raised in women taking oral contraceptives. 2 Finding an "accurate" method for vitamin A estimation is a recurrent problem in vitamin A research, 3 and it is therefore important that these studies, using different techniques (fluorometric, ultraviolet irradiation, and colorimetric), revealed similar trends. Some of the methods and conclusions of Mrs. Wild and her colleagues could, however, be considered open to criticism.

In Great Britain the present pattern of serum A levels in pregnancy is considerably different from that observed 30 years ago in the United States. 2 During normal pregnancy the maternal serum vitamin A concentration decreases until about the end of the first 12 weeks, then increases gradually by the end term (pattern consistent between individuals). 4 Because of this changing pattern Mrs. Wild and her colleagues' method of comparing their first trimester values with the second and third trimester values of studies conducted many years ago does not seem appropriate.

It may also be misleading to draw conclusions from studies of pregnant patients when they are grouped according to the time interval between stopping oral contraception and conception, unless the stage of pregnancy is stated. With these methods it would be difficult to establish whether or not the raised vitamin A level is raised in early pregnancy following oral contraception, as our figures have shown that women in their fourth month of pregnancy have levels similar to those of women on oral contraceptives. 2 In the non-pregnant state at least three months is required for the serum vitamin A level to revert to normal after oral contraception. 5 By investigating patients four months after such therapy Mrs. Wild and her colleagues probably missed this stage, which may explain why their index and control groups showed no differences. According to my observations, if pregnancy occurs during this time the vitamin A concentration is higher than average in both maternal and fetal tissues. 6

The authors' study gives no reassurance regarding the teratological significance of the raised vitamin A levels since their observation does not show the effect of small doses of maternal oral contraceptives on the early stages of pregnancy. Their data concerning the outcome of pregnancies may also be altogether reassuring. While the first group's figures (women becoming pregnant more than 5 weeks after oral contraception) corresponds to the normal expectation, the second group (women with blood vitamin A levels above 94 mg/l00 ml) could show differences. Excluding cases with an unknown outcome of pregnancy and counting only in the second group one baby which appeared in both groups, the proportions of all abnormal pregnancies would be estimated as 67% and 148 % respectively. However, if abortions are excluded the figures are 2.4% and 7.5%: the relatively high incidence of urogenital anomalies in male infants (2.4% and 11.0% in the two groups) deserves attention because an influence of maternal progestogen therapy (oral contraceptives) cannot be ruled out. Since the sex distribution of the infants was not given I was obliged to base the calculations above on a rough estimate of 50% for each of the sexes.

Vitamin A and synthetic sex hormones are teratogens in experimental animals and the teratological safety of these substances has never been proved in humans. It is well known that drugs can on occasion be powerful teratogens without giving symptoms of...