

in that part of the country, so this is, forms, the background on an unselected series against which a selected series was compared.

I then selected women specifically because they aborted a pregnancy, which was conceived within 6 months of discontinuing oral contraceptives.

The results of these two studies are compared in table I, and in the control study, the instance of total chromosome analysis was 22 percent; in the study following oral contraceptives it was 48 percent. However, it is not the absolute increase in abnormalities which is of particular interest, but the type of abnormality which is increased.

There were mainly three types of chromosome abnormality encountered in spontaneous abortions, and one is common, so the number is 47 instead of 46.

In the other type there was one sex chromosome missing, so there were only 45 chromosomes instead of 46, and in the other time there are whole extra sets of chromosomes, so that there were either 69 chromosomes or 92 chromosomes instead of the normal 46.

In the abortuses of women who became pregnant within 6 months of discontinuing oral contraceptives, there was a four and a half fold increase in the incidence of triploid abortuses, and although the figure may look small, the series is very large in statistical terms.

There were 54 abortuses studied. The numbers were small, but in statistical terms they were very large because we were able to show that the increase in triploidy was so great that it could not have occurred on the basis of chance one in 10,000, which makes it very significant.

Fortunately, this type of abnormality is virtually always associated with abortion before the third month of pregnancy. There have been very few instances, cases in the literature, there were three cases, in which the infant went to birth, but died a short time afterwards, so triploidy is virtually always associated with abortion. The type of chromosomes—

Mr. GORDON. Do you know if any of them lived?

Dr. CARR. Yes. There have been three reported in the literature which got to be born, and there are three others that I know of, and they have all died within hours or days of birth. There are no living triploid individuals who have gone on living for some period of time.

Mr. GORDON. What are the characteristics of the results of this?

Dr. CARR. Strange to relate they do not show particularly striking abnormalities either in the abortions or in those that go to term. They may have a variety of abnormalities, but there is no consistent picture. They may have abnormalities of the nervous system or the eye or the fingers, but there is no consistent picture from one case to another.

The common types of abnormality which are associated with live birth, that is the presence of one extra chromosome, which is commonly found in Down's Syndrome or mongoloidism, there was no evidence of increase in this condition in the abortuses, and there was no increase in the type of abnormality where one chromosome was missing, 45, and this is very comforting. In other words, the type of abnormality associated with oral contraceptives is one which is lethal.

There has been other work done which I hadn't mentioned in my submission because I only checked it—well, for one, last night—Dr. Cecil Jacobson, here in the city of Washington, has carried on chromo-