

LONG TERM EFFECTS OF MATERNAL LOW DOSE PROGESTOGENIC CONTRACEPTIVES ON THEIR NURSLINGS

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SUMMARY

To assess the long term effects of exposure to low dose progestogenic (L.D.P.) type of contraceptives during infancy through breast milk, a group of children exposed to this contraceptive effects were compared with another group of age and socioeconomically matched group of children who had never been exposed to these steroids. Detailed medical examination including growth and physical and mental development of these children revealed no untoward effects in their growth, physical and mental well-being.

INTRODUCTION

The versatile manner in which steroidal contraceptives can be used makes them an integral part of the array of contraceptives that can be offered to lactating mothers today. However, amongst the steroidal contraceptives the most preferred are the low dose progestins (L.D.P.) because besides providing adequate protection to the nursing mother against a new pregnancy they do not in any way

affect lactation per se. However, one major drawback of drugs, contraceptives or others, prescribed to nursing mothers is their transfer to breast milk. In this article, we have restricted ourselves only to L.D.P. taken by nursing mothers. All L.D.P. taken by nursing mothers are transferred to their breast milk (Toddywalla et al, 1980; Nilsson et al, 1977; Saxena et al, 1977) which after breast feeding can be detected in the infants circulation (Betrabet et al, 1987; Shikary et al, 1987; & Nilsson et al, 1977).

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What immediate and long term effects, this 1-3% of the maternal L.D.P. transferred to the infants circulation has on these infants, formed the subject of our study.

Immediate Effects of Maternal L.D.P. in the infants circulation on their pituitary gonadal axis :

In the human male, three peaks of testosterone (T) are observed i.e. the fetal, neonatal and pubertal peaks. Elevated levels of T in low adult range are observed between the first to the third months of life. (Forrest et al, 1973 & 1974). It has been postulated that the second T peak may have a possible role in the future sex pattern of the new born male infant. Since higher levels of T are observed in male infants as compared to female infants, this T was thought to be of testicular origin (Forrest et al, 1973 & 1974). Further, the increased levels of LH, observed from second week postnatally upto four months and peak levels of FSH observed around two to three months of life (Forrest et al, 1973 & 1974) suggest an active pituitary - gonadal (testicular) axis during the early months of life in the male infants. Our study (Shikary et al, 1986) on the effect of minute quantities of maternal levo norgestrel (LNG) present in the infants circulations on their pituitary - gonadal axis (neonatal peaks) indicated comparable patterns of daily urinary FSH, LH & T between the control & study group infants; thereby indicating no adverse effects in the exposed infants.

MATERIAL AND METHODS

The mothers and children interviewed

and investigated here, were the same mother-infant pairs who had taken part in a number of our studies on lactation and hormonal contraception. All the mothers were healthy 20-35 years old women having normal healthy full term infants. Essentially all of them had earlier been recruited from the post-natal clinics of the Wadia Maternity Hospital, Bombay. The study subjects were divided into various groups depending on their period of exposure to maternal contraceptive steroids in infancy. Thus we had :

Gr A - Control Group, this group consisted of 22 age and socio-economically matched children who had never been exposed to contraceptive steroids in infancy. They were essentially siblings of our study children.

Children in this group were examined on three different occasions after a time lapse of 2-3 years. The ages of these children at recruitment varied from 2-8 years.

Gr B - Study Group (Short Period Exposure), this group consisted of 58 infants who had been exposed to L.D.P. viz. orals and injectables for periods between one to three months.

This was a longitudinal follow-up group. Twenty children from this group were followed up yearly from infancy for five years. Thirty three were followed up yearly from infancy for eight years. Five were followed up yearly from eight years to puberty.

Gr C - Study Group (Long Period Exposure), this group consisted of 69 children exposed to L.P.D. for periods varying from 4 months to 1 year. Twelve infants were exposed to L.D.P. injections

for periods varying from 9 months to one year, 38 were exposed to L.D.P. released from medicated IUD and implants used by their mothers for periods varying from four months to almost a year and 19 were exposed to oral low dose progestogen mini pill for four to five months. This was a cross-sectional follow up group. Thirty six children in this group were already in the post-pubertal age (14-18 years). They were examined on only one occasion. Thirty three were prepuberty children (around 10 years). They were examined on 3 to 4 occasions.

RESULTS

The information gathered was both through interviewing the mothers and physical examination of the children.

(A) Information through maternal interviews :-

(1) Milestones

Detailed informations on the age at which the infant started - smiling, recognizing, head holding, turning-over, sitting, standing, walking, talking etc. were collected.

The differences were well within the standard acceptable range (Illingrowth, 1977) for both the control and the study groups.

(2) History of Illnesses

Detailed informations regarding any chronic or major illness like - failure to thrive, frequent infections, dermatitis, hypogonadism, short stature etc. were collected.

No significant differences were

seen between the control and the study groups.

(3) Social Behaviour

Detailed informations regarding social behaviour including performance in school etc. were collected.

No significant differences were seen between the control and the study groups children.

(B) Physical Examination of Children

Both the control and the study group children were examined for their :

(1) Anthropometric Parameters

These included measurements on the height, weight and head circumferences of all children. When they were compared against the standard ICMR (1968) norms, it was found that almost all the children in the control as well as the study group were within the 25 to 75 percentile for that age and sex group.

No significant differences were seen between the control and study group children.

(2) General Medical Examination

This included detailed cardiovascular, neurological and genital examination of children.

No abnormalities were detected in both the control and study group children.

DISCUSSION

In this study we were unable to demonstrate any adverse effects of the maternal L.D.P. ingested by the nursing

on its long term physical, mental and general well-being. It is true that the present study includes a limited number of children, however, it is reassuring to note that both in our study and that by Jimenez et al (1984) with depot-medroxy progesterone acetate on 128 children no detectable side effects were observed.

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