

IS RADIOIODINE (I-131) TERATOGENIC ?

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Use of radioiodine is absolutely contraindicated during pregnancy,¹ although dose to fetal thyroid is small, but sensitivity and untoward effect may be of medicolegal consequence. However, gonadal exposure is extremely low (less than a diagnostic radiograph), genetic effects are unlikely, extensive studies have failed to show I-131 related neoplasm or birth defects.^(2 to 7)

No significant increase in genetic abnormalities has been documented in children of Japanese parents exposed to atomic radiation,⁸ and there is an increased tendency to treat young patients with I-131 in recent years.⁹ In human beings, organogenesis does not begin until the third week after conception. There is no evidence that radiation of a conceptus in the early weeks of pregnancy is more dangerous than irradiation of the ovary before fertilization. The International Commission on Radiological Protection (ICRP) withdrew support for the 10-day rule in 1984. Many agree that pregnancy be allowed to continue after known exposure of less than 10 centi-Gray (cGy), but some would reduce the upper limit to 5 cGy in the second trimester¹⁰ (1 cGy = 1 rad). We found a healthy daughter born to a woman who inadvertently received radioiodine therapy during early pregnancy, and would like to report considering its rarity.

CASE REPORT

A woman of age 30 years complained of increased sweating, weight loss inspite of increased appetite, palpitations, insomnia and was diagnosed as thyrotoxic in February, 1995. She took carbimazole (neomercazole) 45 mg/day for a month with little improvement and received I-131 therapy (10 milli-Curie) on 18-5-95 at Nuclear Med. Institute, Dhaka. At first follow-up, she disclosed that her last menstrual period (LMP)

started on 25-5-95 and ultrasonography revealed gestational sac of 10 weeks 2 days. She was advised therapeutic abortion but she did not agree and gave birth to a healthy daughter on 12-3-96. The baby is in good health till the last follow-up in 27-9-99, however, her mother is now hypothyroid and on thyroxine (100 microgram daily) therapy (Table 1).

Table 1. Hormone levels

Date	T ₃ NR 0.8-3.16 nmol/L	T ₄ NR 64.5-152 nmol/L	TSH NR 0.3-6 mIU/L
19-3-95	8.89	214	0.09
13-4-95	5.39	213	0.02
5-9-95	0.3	60	0.17
31-3-98	0.48	20	49.9
7-9-99	2.5	50	17.75

NR = Normal Range

DISCUSSION

We do not recommend the use of radioiodine during pregnancy and lactation, however, the present case shows that radioiodine is not teratogenic.

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