GUIDELINES FOR MEDICAL DIAGNOSTIC PROCEDURES USING X-RAY FOR WOMEN OF CHILDBEARING POTENTIAL.

In 1964, The National Health And Medical Research Council (NHMRC) recommend that “In women of childbearing age non-urgent x-ray examinations that entailed pelvic irradiation should be restricted to the first ten days of the menstrual cycle”. This practice is commonly known as 10-Day Rule.

In 1984, the International Commission on Radiological Protection (ICRP) reported that there was little, if any, risk of damaging the foetus during the first two weeks of gestation i.e. before the first menstrual cycle was missed (1). The National Radiological Protection Board (NRPB) issued advice based on this statement (2). The College of Radiographers and Royal College of Radiologists followed up with their joined guidelines (3). Before an examination of an area where the uterus is within or close to the irradiated area is conducted, the radiographers and radiologists are required to ask the patient if there is any possibility that the patient may get pregnant. If the patient replies in the negative (NO) then the radiographers and radiologists must ask the date of the patient’s last period. If the menstrual cycle is overdue, then the examination may be postponed. This practice is commonly known as 28-Day Rule.

In 1993, the NRPB published its latest statement on diagnostic medical exposure to ionizing radiation during pregnancy (4). For adverse effects (foetal death or malformation, severe mental retardation and inherited diseases in future generation), the influence of diagnostic doses of radiation was found to be insignificant in relation to the natural incidence of these disorders. However, for induction of cancer the position is not clear. Evidence now exists that some carcinogenic mutations, even at the very early stage of life, are compatible with
continuing development of the foetus and may result in an additional risk of fatal childhood before the age of 15 of 1 in 1300 (4). This represents a doubling of the incidence in unexposed population. The procedures that concern NRPB are those that entail doses of “some of tens mGy”. In routine practice, this means abdominal or pelvic computed tomography and barium enemas. The NRPB suggests that one way to avoid irradiation of an early foetus is to restrict these high dose procedures to the first ten days of the menstrual cycle i.e. a limited return to the 10-Day Rule.

Based on the current knowledge, the following guidelines should be adhered to;

i) For most of the routine examinations, except those falling into the high dose category, which all result in irradiation to the uterus, radiology departments should apply 28 Day Rule.

ii) For non-urgent examinations involving high doses to uterus in patients who are at risk of pregnancy but not yet overdue, the examination should be delayed until the first ten days of their next menstrual cycle. High dose examinations include computed tomography of the abdomen and pelvis and barium enema.

iii) Radiation exposure of lower abdomen and pelvis of women of childbearing potential should be kept to a minimum. During pregnancy, radiation to these regions should only occur if the radiological examination could not be postponed because of the urgent nature of the investigation.

iv) The risk of radiation damage to a foetus, even at the relatively high doses resulting from abdominal or pelvic computed tomography or barium enema, is small, and inadvertent exposure in early pregnancy will not of itself be an indication for termination on for the use of invasive diagnostic procedures such as amniocentesis.
REFERENCES


2. National Radiological Protection Board. Exposure to ionizing radiation of pregnant women: advice on the diagnostic exposure of women who are, or who may get pregnant. ASP8.NRPB, 1985.
