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Technetium Tc 99m Medronate

Revised: June 30, 2019.

CASRN: 63347-66-0

Drug Levels and Effects

Summary of Use during Lactation

Information in this record refers to the use of technetium Tc 99m medronate (Tc 99m methylene diphosphonate; Tc 99m MDP) as a diagnostic agent. The United States Nuclear Regulatory Commission and the Society for Nuclear Medicine state that breastfeeding need not be interrupted after administration of Tc 99m MDP in doses up to 1000 MBq (30 mCi) to a nursing mother.[1][2] The International Commission on Radiological Protection also recommends that breastfeeding need not be interrupted after administration technetium Tc 99m medronate.[3] However, to follow the principle of keeping exposure "as low as reasonably achievable", some experts recommend nursing the infant just before administration of the radiopharmaceutical and interrupting breastfeeding for 3 to 6 hours after the dose, then expressing the milk completely once and discarding it. If the mother has expressed and saved milk prior to the examination, she can feed it to the infant during the period of nursing interruption.[4][5][6][7] Mothers need not refrain from close contact with their infants after usual clinical doses.[8]

Mothers concerned about the level of radioactivity in their milk could ask to have it tested at a nuclear medicine facility at their hospital. When the radioactivity is at a safe level she may resume breastfeeding. A method for measuring milk radioactivity and determining the time when a mother can safely resume breastfeeding has been published.[9]

For nursing mothers who work with Tc 99m substances in their workplace, there is no need to take any precautions other than those appropriate for general radiation protection.[10]

Drug Levels

Tc 99m is a gamma emitter with a principal photon energy of 140.5 keV and a physical half-life of 6.024 hours.[1] With perchlorate blocking, the effective half-life of Tc 99m medronate averages 4.9 hours and 0.01% of an administered dose appears in breastmilk. Without blocking, the effective half-life is 3.6 hours and 0.027% of an administered dose appears in breastmilk.[11]

Effects in Breastfed Infants

Relevant published information was not found as of the revision date.

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

Alternate Drugs to Consider

Technetium Tc 99m Mertiatide, Technetium Tc 99m Ethylenedicysteine

References

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Substance Identification

Substance Name

Technetium Tc 99m Medronate

CAS Registry Number

63347-66-0

Drug Class

Breast Feeding

Lactation

Radiopharmaceuticals

Technetium Compounds

Diagnostic Agents