

## ANNEX D. RECOMMENDATIONS ON BREAST-FEEDING INTERRUPTIONS

### D.1. Introduction

(D 1) Since many radiopharmaceuticals are secreted in breast milk, it is safest to assume that, unless there are data to the contrary, some radioactive compound will be found in the breast milk when a radiopharmaceutical is administered to a lactating female. Consideration should be given to postponing the procedure. If the procedure is performed, the child should not be breast fed until the radiopharmaceutical is no longer secreted in an amount estimated to give an effective dose >1 mSv to the child. It is therefore recommended that the following actions should be taken for various radiopharmaceuticals, and that the milk expressed during this interruption period should be discarded.

Radiopharmaceutical	Interruption
<i><sup>14</sup>C-labelled</i>	
Triolein	No
Glycocholic acid	No
Urea	No
<i><sup>99m</sup>Tc-labelled</i>	
DISDA	No <sup>*,†</sup>
DMSA	No <sup>*,†</sup>
DTPA	No <sup>*,†</sup>
ECD	No <sup>*,†</sup>
Phosphonates (MDP)	No <sup>*,†</sup>
Gluconate	No <sup>*,†</sup>
Glucuheptonate	No <sup>*,†</sup>
HM-PAO	No <sup>*,†</sup>
Sulphur colloids	No <sup>*,†</sup>
MAA	12 h
MAG3	No <sup>*,†</sup>
MIBI	No <sup>*,†</sup>
Microspheres (HAM)	12 h
Pertechnetate	12 h
PYP	No <sup>*,†</sup>
RBC (in vivo)	12 h
RBC (in vitro)	No <sup>*,†</sup>
Technegas	No <sup>*,†</sup>
Tetrofosmin	No <sup>*,†</sup>
WBC	12 h

Radiopharmaceutical	Interruption
<i>I-labelled</i>	
<sup>123</sup> I-BMIPP	>3 weeks <sup>‡,§</sup>
<sup>123</sup> I-HSA	>3 weeks <sup>‡,§</sup>
<sup>123</sup> I-iodo hippurate	12 h
<sup>123</sup> I-IPPA	>3 weeks <sup>‡,§</sup>
<sup>123</sup> I-MIBG	>3 weeks <sup>‡,§</sup>
<sup>123</sup> I-NaI	>3 weeks <sup>‡,§</sup>
<sup>125</sup> I-HSA	>3 weeks <sup>‡</sup>
<sup>125</sup> I-iodo hippurate	12 h
<sup>131</sup> I-iodo hippurate	12 h
<sup>131</sup> I-MIBG	>3 weeks <sup>‡</sup>
<sup>131</sup> I-NaI	>3 weeks <sup>‡</sup>
<i>Others</i>	
<sup>11</sup> C-labelled	No <sup>¶</sup>
<sup>13</sup> N-labelled	No <sup>¶</sup>
<sup>15</sup> O-labelled	No <sup>¶</sup>
<sup>18</sup> F-FDG	No
<sup>22</sup> Na	>3 weeks <sup>‡</sup>
<sup>51</sup> Cr-EDTA	No
<sup>67</sup> Ga-citrate	>3 weeks <sup>‡</sup>
<sup>75</sup> Se-labelled agents	>3 weeks <sup>‡</sup>
<sup>81m</sup> Kr-gas	No
<sup>111</sup> In-octreotide	No
<sup>111</sup> In-WBC	No
<sup>133</sup> Xe	No
<sup>201</sup> Tl-chloride	48 h

\*No<sup>\*</sup>, interruption not essential.

<sup>†</sup>No<sup>†</sup> for most of the <sup>99m</sup>Tc-labelled compounds, under the circumstance that no free pertechnetate exists in the radiopharmaceutical. An interruption of 4 h during which one meal is discarded can be advised to be on the safe side.

<sup>‡</sup>3 weeks (504 h) at least. However, difficult to maintain the milk supply → cessation.

<sup>§</sup> <sup>123</sup>I, all substances labelled with <sup>123</sup>I (except iodo-hippurate): >3 weeks due to the risk of contamination of other iodine isotopes.

<sup>¶</sup> <sup>11</sup>C, <sup>13</sup>N, and <sup>15</sup>O-labelled substances, interruption not essential due to short physical half-life.

## D.2. References and further reading for Annex D

- Ahlgren, L., Ivarsson, S., Johansson, L., Mattsson, S., Nosslin, B., 1985. Excretion of radionuclides in human breast milk after the administration of radiopharmaceuticals. *J. Nucl. Med.* 26, 1085–1090.
- Castronovo Jr., F.P., Stone, H., Ulanski, J., 2000. Radioactivity in breast milk following <sup>111</sup>In-octreotide. *Nucl. Med. Commun.* 21, 695–699.