Studies of Distribution of Thorotrast in Bone

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Radiochemical analysis results from a Thorotrast whole body donation published in recent reports suggested that a significant fraction of Thorotrast is present in bone as well as bone marrow. The authors of the present study have considered Thorotrast deposited in bone to be negligible based on bone narrow distribution studies. If the highe44r value given for bone were to be accepted this would have a significant effect on marrow dose and subsequent risk estimates for leukaemogenesis. In order to investigate this problem bone/bone marrow samples removed from the same whole body donor, as well as samples form other studies have been examined using X-ray fluorescence analysis, neutron activation analysis, electron probe X-ray microanalysis, secondary ionization mass spectrometry and solid state autoradiography combined with image analysis methods. It was concluded that Thorotrast is essentially absent from bone and that bone deposits can be ignored for the purposes of dosimetry for leukaemia risk estimates.

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