

IRPA9  
1996 International Congress on  
Radiation Protection  
April 14-19,1996  
Vienna, Austria

FORM FOR SUBMISSION OF ABSTRACTS  
(Instructions for preparation on reverse)

FOR OFFICIAL USE ONLY	
Abstract No.	.....
Receipt	.....
Author	.....
Acceptance	.....
Mini-Presentation	.....

PAPER TITLE     QUANTIFICATION OF I-131 UPTAKE IN METASTASES FROM THYROID CARCINOMA

AUTHOR(S) NAME(S)     L.J.Hahn, R.Kloiber, T.Farncombe

SUBMITTING AUTHOR

LAST NAME     HAHN     FIRST NAME     LESZEK     TITLE     PhD  
AFFILIATION     Foothills Hospital, Dpt.Radiology     TEL     (403) 670 1542  
STREET     1403-29th Str. NW     FAX     (403) 670 1687  
CODE     T2N 2T9     CITY     Calgary, Alberta     COUNTRY     Canada

PRESENTING AUTHOR (IF DIFFERENT) .....

MAJOR SCIENTIFIC TOPIC NUMBER     6.2 (see page 7)

ABSTRACT (See instructions overleaf)

Quantification of I-131 uptake in metastases from thyroid carcinomas is essential for appropriate patient selection and therapy dose calculation. Measurement of activity in opposing projections and tissue attenuation from a transmission scan has been considered the method of choice (M.J.Myers et al., Br.J.Radiol., 1981, 54, p.1062). The technique is both cumbersome and high activity of I-131 filled flood phantom pose a radiation hazard. Transmission measurements with a collimated point source and a uptake probe address safety concerns but make positioning difficult. Measurement of the reference standard under tissue equivalent absorbers selected to simulate soft tissue thickness calculated from anatomical imaging studies is both convenient and safe. Phantom studies have shown accuracy equivalent to the transmission technique.

Results.

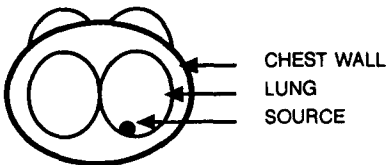


Fig.1 3M X-ray chest phantom used for simulations

activity	transmission method	reference std method
174 kBq	130 kBq	146 kBq
118 kBq	105 kBq	117 kBq
96 kBq	90 kBq	100 kBq
63 kBq	50 kBq	56 kBq
33 kBq	27 kBq	30 kBq

Tab.1 Evaluation of phantom activity using trans. and ref. std. methods