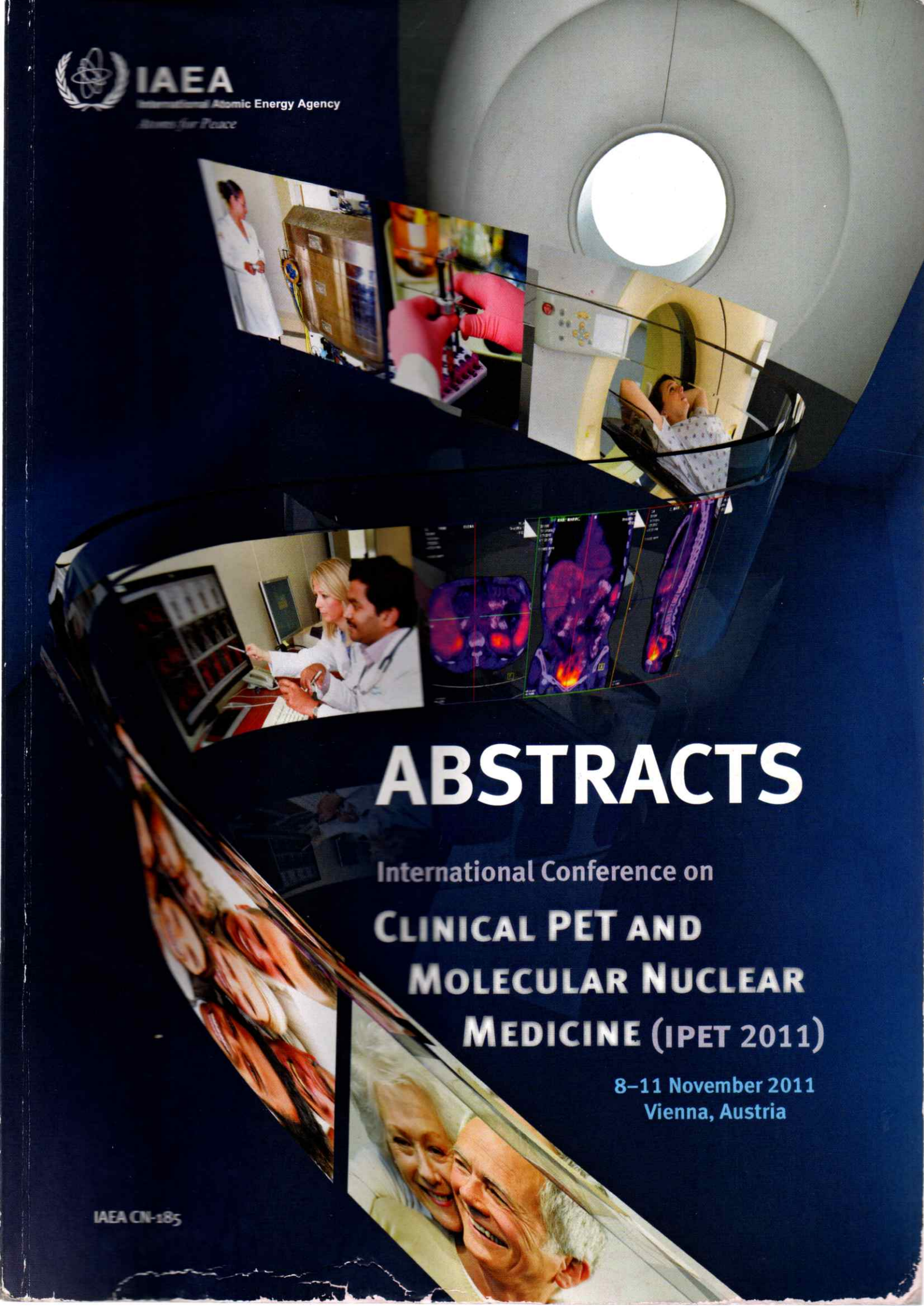

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ABSTRACTS

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BOOK OF ABSTRACTS

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CONTENTS

Evaluation of patient radiation dose during Nuclear Medicine investigations at Dr.M.Djamil Hospital- Padang- Indonesia

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Background: Radiation exposure for medical purposes is justified only when it is of benefit to the patient. Radiation dose for medical diagnostics should be low, reasonable and achievable; however, with provision for an adequate and optimum clinical diagnostics. The aim of this study is to determine the radioactivity levels and equivalent radiation dose during nuclear medicine investigations that is within the standardized safe limits at Dr. M. Djamil hospital Padang Indonesia.

Material and Methods: Subjects were selected randomly from the patients who were referred to our department for thyroid imaging, bone imaging and renography during the year 2009. They were divided into three groups, based on investigation types and radiopharmaceutical administration:

1) Group one: Thyroid imaging, Technetium 99m(99mTc)

2) Group two: Bone imaging, Technetium 99m-methylene-diphosphonate (99mTc-MDP).

3) Group three: Renography, Technetium 99m-diethylenetriaminepentaacetic acid (99mTc-DTPA).

Dose calibrator (Medisystem-202) and Thermoluminescence dosimetry -100 (TLD -100) were used to measure radioactivity level and equivalent radiation dose respectively. All subjects who were involved in this study had given an informal consent.

Results: Thirty four subjects were included in this study with age ranging from 29-65 years of age. 12 subjects participated in group one, 12 in group two and 10 in group three. Group one, two and three received average levels of radioactivity- per test were 4.08 mCi (151 MBq), 14.3 mCi (529 MBq) and 4.46 mCi (165 MBq) respectively. The average of equivalent radiation dose per test for group one, two and three were 0.31±0.11mSv, 0.7±0.31mSv, 0.33±0.88mSv respectively.

Conclusion: For patient safety, radioactivity levels and equivalent radiation dose during nuclear medicine investigations at our hospital within international and national guideline of radiation protection, working under standards of radiation protection is mandatory.