

## PE24

**Thyroid Cancer Profile in the Philippines-How Effective is I-131 therapy?**

Emerita Barrenechea

St. Luke's Medical Center, Philippines

The objective of this study is to determine the profile of well-differentiated thyroid cancers in the Philippines in a ten-year study and how efficacious radioactive iodine ablation is. Thyroid Cancer ranks 7th overall, 4th in females and 17th in males in the Philippines. The incidence is 5 times in females than that of males. The most frequent age group is the 40-50 age group. Known predilection factors are previous history of irradiation to the neck, iodine deficiency and possibly abundance of active volcanoes in the surrounding. The majority of cases (688) are well-differentiated types namely papillary 70% and follicular (27%) or mixed. Medullary cases accounts for 2% and anaplastic (1%). Majority of cases are responsive to the three accepted combination of therapy namely near total thyroidectomy, radioactive iodine ablation and lifetime thyroid hormone suppression. Percentage of cure for neck residuals using 100mCi is 78%; 48% for those with lung metastases using 150mCi and only palliative for those with skeletal metastases meaning we start with 200mCi and give increasing doses till 4 to 5 times just to improve survival. Of late, however, problematic cases have been encountered. In these cases, PET/CT and SPECT/CT have a role to play in the aggressive containment of the disease. Likewise other modalities of treatment as external beam therapy and chemotherapy have to be combined to the usual treatment to improve survival. Newer modalities like use of radiosensitizers, NIS symporters, Yttrium-90 dotatate or somatostatin analogs may be helpful in these problematic cases.

## PE25

**Study on I131 treatment to the damage of salivary gland function of patients with differentiated thyroid carcinoma**

Shaohua Li, WANG Zi-zeng, WANG Feng, YAO Wei-xuan, SHAO Guo-qiang, JIANG E, ZHANG Le-le, MENG Qing-le  
Department of nuclear medicine center, NanJing First Hospital, Nanjing Medine University, China

**Aim:** The study was to investigate the chronic function damage of the salivary gland by high dose of I131 in the treatment of differentiated thyroid carcinoma (DTC). **Method:** Salivary gland scintigraphy, for the evaluation of its function, were made before and 6-39 months after high dose of I131 treatment of 143 patients with DTC after thyroid ablation. **Results:** 21.7% (31/143) patients with DTC suffered from chronic salivary gland damage after I131 treatment. And the incidence of chronic damage was more predominant in patients accepting repeated I131 therapy (aggregated dose ranging from 7.4~37.0GBq) than those only once (dose less than 3.7GBq). ( $P < 0.005$ ). **Conclusion:** Repeating and large dose of I131 treatment is more common to cause chronic salivary gland damage.

## PE26

**Epidemiology of differentiated thyroid carcinoma in Morocco**

Nouzha Ben Rais, Imad Ghfir, Filda Missoum, Jamila Rahali, Hasna Guerrouj, Rachid Ksayer  
Nuclear Medicine Department Morocco

Epidemiology of differentiated thyroid carcinoma (DTC) is a complex issue. Data in DTC incidence depend on the efforts undertaken through screening and in the diagnostic methods employed. The objective is to carry an epidemiologic approach of DTC in our country with an evaluation of the recent review of literature. This work consists of a retrospective analysis of 3144 cases of DTC followed in nuclear medicine department of IBN SINA hospital in Rabat over a period of 20 years. The

epidemiology has allowed us to study the influence of gender, age, tumor size, pathological type and prognosis factors in DTC. Epidemiological studies contribute to a better understanding and management of DTC. Further studies are mandatory to determine risk factors and elucidate pathogenetic mechanisms of DTC.

## PE27

**Thyroglobulin concentrations measured in the presence of antithyroglobulin autoantibodies**

Snezana Zivancevic-Simonovic\*, Olgica Vrdmic\*, Ilija Jetic\*, Marijana Stanojevic\*, Aleksandar Djukic\*, Ljiljana Mijatovic\*

\*School of Medicine, University of Kragujevac, Serbia

\*Department of Nuclear Medicine, Clinical Center Kragujevac, Serbia

Thyroglobulin autoantibody (TgAb) interference with Tg measurements remains the most serious problem limiting the clinical significance of serum Tg values in patients with differentiated thyroid cancer. The aim of this study was to explore the influence of TgAbs on Tg concentrations measured by an immunoradiometric assay (IRMA). We have used standard Tg concentrations (50, 100 and 200 g/L), THYRO, CIS biointernational, France, and 30 patient's sera with TgAbs. Standard Tg concentrations were preincubated with patient's sera or zero standard of TgAbs (volume ratio 1:1) during 30 min and Tg concentrations were measured. Tg concentrations obtained in the presence of patient's sera were compared with Tg concentrations measured in the presence of zero standard of TgAb. The Tg concentrations in the range of 80-120% of expected values were considered unvaried. The standard Tg concentrations measured in the presence of patient's sera with TgAb were unvaried (76.7%), decreased (16.7%) or increased (7.6%), respectively. These results were obtained with all three standard Tg concentrations that were analysed. It was interesting that maximal influence of TgAbs on Tg concentrations were not obtained with patients sera containing utmost TgAb concentrations, indicated that not concentration, but specificity of TgAbs in patient's sera has predominant influence on Tg measurements. Our results show that TgAbs in some, but not all patient's sera have influence on Tg concentrations measured by an IRMA assay. The degree of influence of TgAbs on Tg measurements depends predominantly on autoantibody specificity.

## PE28

**Quantification of the thyroid volume by pinhole spect (PHS)**

G. Démonceau\*, M. Hesse\* and S. Walrand\*

\*St Elisabeth Hospital, Zottegem, Belgium; \*University of Louvain, Brussels, Belgium

We evaluate the quality of the quantification provided by the pinhole SPECT method. To do so we focus on the determination of the thyroid volume. We performed more than 200 acquisitions of phantoms, with various sizes (from 20 to 150 ml), shapes (8 available) registered counts (varying in a range from 1 to 6, but still clinically relevant). All the acquisitions were made on a 180° anterior circular orbit. The dedicated software uses an OSEM reconstruction algorithm, adaptive filters and a threshold of 43% for ROI delineation. The number of iterations ranges from 1 to 20, with a subset number of 6. The pixel size was chosen between 2 and 3 mm. Various signal/background levels ranging from 1.1 to 2.0 were also evaluated. Finally, the reproducibility of the method was tested on 6 patients injected with I-123 and imaged twice the same day. The calculated mean volume of the classical thyroid phantom was  $99.4 \pm 2.3\%$  of the expected one. Accepting even an error level of 5% or, for the volumes less than 60 ml, a discrepancy of 3 ml, no phantom volumes was significantly affected by the studied parameters. There was a trend to overestimate the volume when it was smaller than 25 ml and/or when the phantom was