

# Prevalence and risk of malignancy of Thyroid Incidentalomas discovered by <sup>18</sup>F-Fluorodeoxyglucose Positron Emission Tomography

Nunes da Silva T., Vara Luiz H., Matos AC., Manita I.<sup>1</sup>, Carmona S.<sup>2</sup>, Santos A.I.<sup>2</sup>, Portugal J.<sup>1</sup>

<sup>1</sup>Serviço de Endocrinologia e Diabetes do Hospital Garcia de Orta (HGO), E.P.E., Almada <sup>2</sup>Serviço de Medicina Nuclear do Hospital Garcia de Orta (HGO), E.P.E., Almada

## Introduction

The use of <sup>18</sup>F-Fluorodeoxyglucose Positron Emission Tomography (<sup>18</sup>F-FDG-PET) has increased the detection of thyroid incidentalomas (TI). These are associated with a risk of malignancy between 25 and 50%. Some studies have shown an association between SUVmax uptake and malignancy.

## Objectives

Determine the prevalence of malignancy on <sup>18</sup>F-FDG-PET positive thyroid nodules. Evaluate if a higher SUVmax uptake is associated with malignancy.

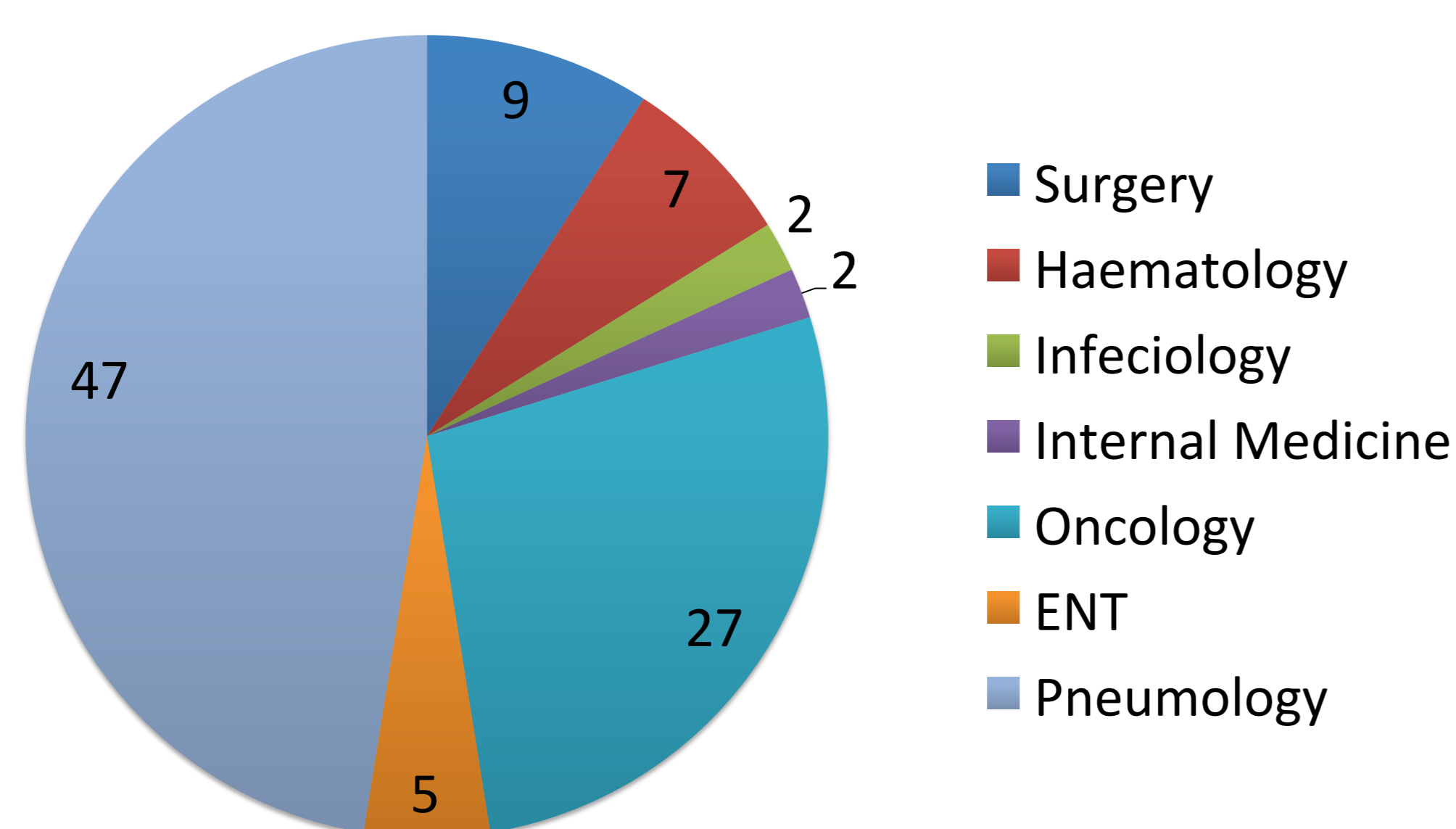
## Material and Methods

Retrospective analyses of all <sup>18</sup>F-FDG-PET exams performed between 2008-2013 HGO. The inclusion criterion was focal thyroid uptake in patients studied for non-thyroid purposes. Data was analysed with SPSS version 21<sup>®</sup>.

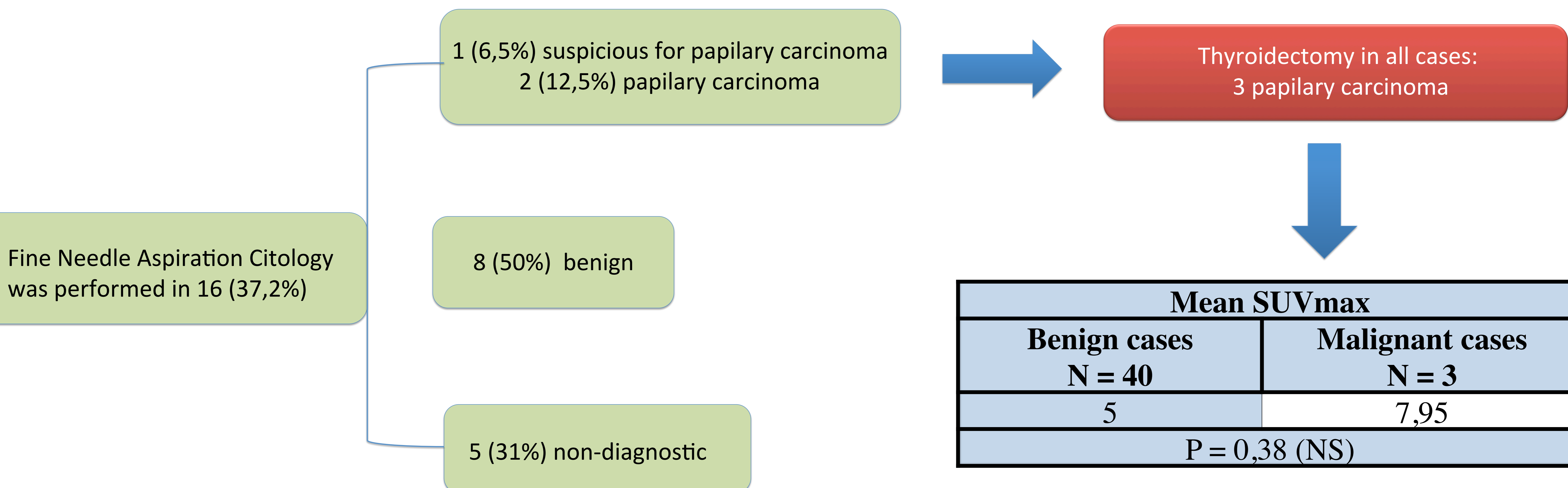
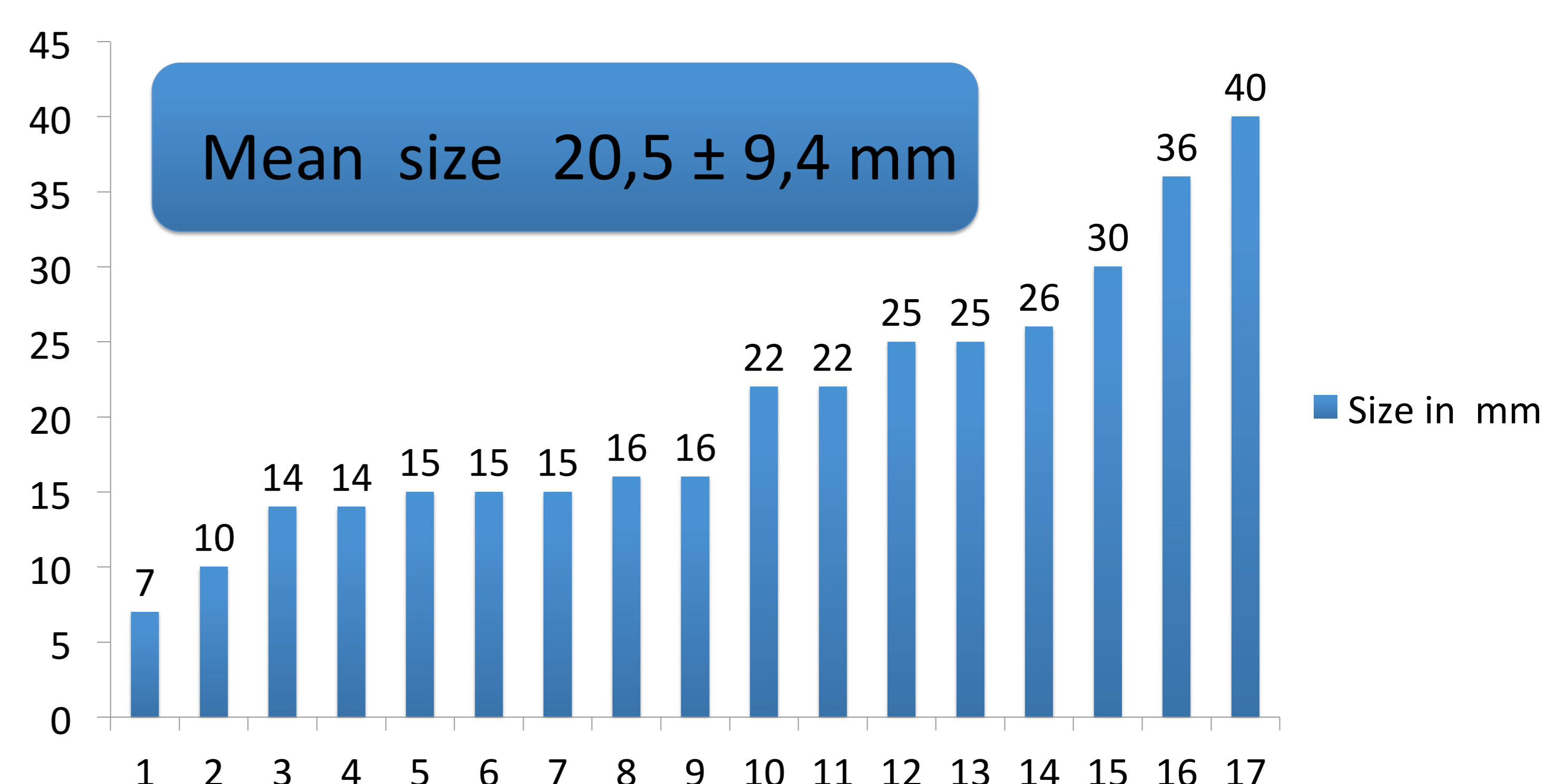
## Results

Population n = 1364 patients				
Positive thyroid uptake	Difuse thyroid uptake	Focal thyroid uptake	Female sex	Mean age
56 ( 4,1 %)	13 (0,9%)	43 (3,2%)	28 (60,5%)	68 ±12,9 years

Source of patients in %



Nodule size in ultrasound



## Discussion and Conclusions

Our work confirmed that despite a low rate of focal <sup>18</sup>F-FDG-PET uptake in thyroid (3,2%), it carries a significant risk of malignancy (19%). Because only 37,2% were evaluated by FNAC and around 30% had non-diagnostic results the true prevalence might have been actually higher than 19%. Two possible explanations are the end of life status of these patients but also the possible lack of knowledge, on non-endocrine services, regarding the risk of malignancy of TI patients. In conclusion despite an undervaluation of patients at risk and the rather high number of non-diagnostic FNAC we recommend FNAC in focal thyroid uptake of <sup>18</sup>F-FDG-PET.

## Bibliography

Fuller GN, Scheithauer BW, Soelberg K, Bonnema S, Brix T., Hegedü's L Risk of Malignancy in Thyroid Incidentalomas Detected by 18F-Fluorodeoxyglucose Positron Emission Tomography: A Systematic Review THYROID; 22:918-925 2012