

Does serum Galectin-3 add value in thyroid cancer diagnosis?

R.Dobrescu¹, S.Schipor¹, D.Manda¹, C.Picu¹, C.Giulea², A.M.Niculescu³, C.Badiu^{1,4}, A.Caragheorghopol¹

1. "C.I.Parhon" National institute of Endocrinology, Bucharest, Romania

2. Elias University Emergency Hospital, Bucharest, Romania

3. SC AGILROM Scientific SA, Bucharest, Romania

4. "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

Introduction

The role of circulating Galectin-3 as a potential biomarker of malignancy in thyroid disease remains inconclusive.

In a previous pilot study, on a limited number of patients (N= 40), we reported a significant difference between serum Gal-3 levels in papillary thyroid carcinoma (PTC) patients and those with benign pathology, but no association with tumor aggressiveness¹.

Objective

We measured serum Gal-3 levels in a larger series of patients submitted to thyroidectomy, in order to assess its value as possible biomarker in PTC.

Patient and methods:

We retrospectively investigated serum Gal-3 in patients who had thyroid surgery in "CI Parhon" National Institute of Endocrinology between jan 2013 – oct 2013

All patients gave their informed written consent

The study was approved by Ethics Committee of the Institute.

Sera were collected before surgery. Gal-3 was measured by Elisa, using a monoclonal antibody specific for human Gal-3 (R&D Systems).

190 patients:

151 women (79.5%) and 39 men (20.5%)

aged 49.09±13.55 years

Study groups based on pathology report:

benign disease (N=88)

differentiated thyroid cancer (N=102)*

* Patients with other types of thyroid neoplasia were excluded

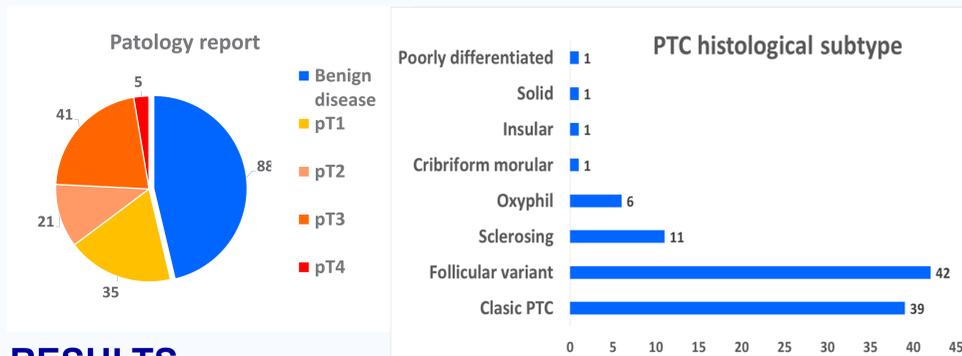
• pT1 – 35 pt (29 pT1a)

• pT3 – 41 pt

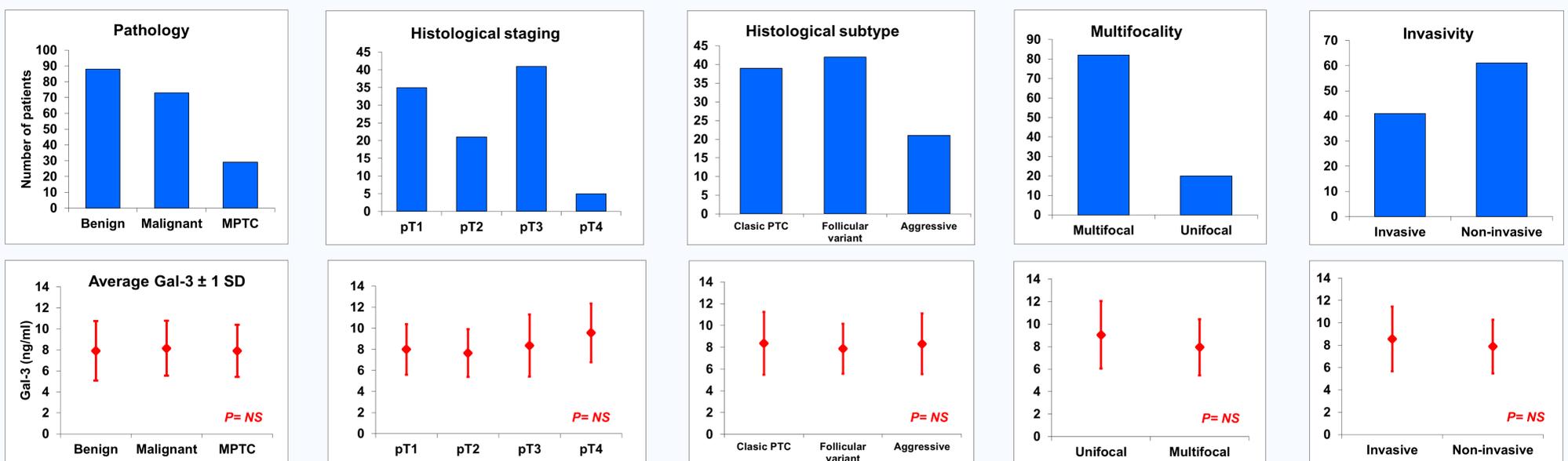
• pT2 – 21 pt

• pT4 – 5 pt

The thyroid cancer group was analyzed according to pathological stage, histological subtype, multifocality, invasion and tumor size.



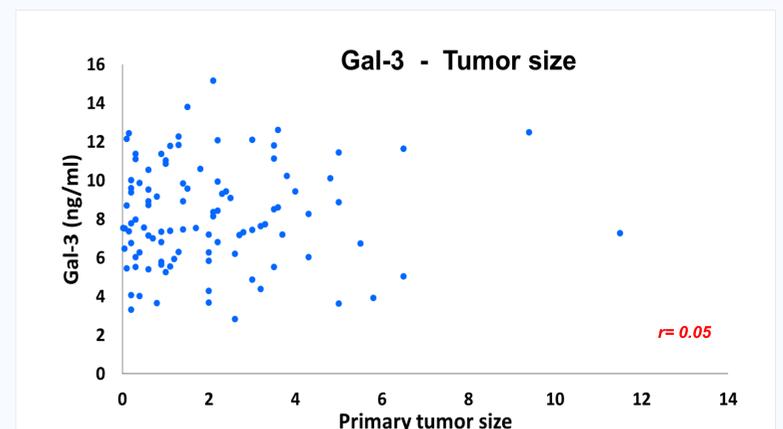
RESULTS



We found no significant difference in serum Gal-3 levels between:

- Cancer and non-cancer patients (9.98±2.66ng/ml vs. 8.11±2.81ng/ml, p=NS)
- Different PTC stages (PTC1: 8.01±2.39ng/ml vs. PTC2: 7.66±2.26ng/ml vs. PTC3: 8.36±2.95ng/ml vs. PTC4: 9.57±2.78ng/ml, p=NS for all comparisons)
- Unifocal vs multifocal PTC (9.04±3ng/ml vs. 7.94±2.49ng/ml, p=NS)
- Invasive vs non-invasive tumors (8.56±2.89ng/ml vs. 7.88±2.41ng/ml, p=NS).

There was no correlation between serum Gal-3 and tumor size (r=0.05)



CONCLUSION:

The analysis of a large series of patients with tumor thyroid disease, using a highly specific Gal-3 antibody, revealed no difference in serum Gal-3 between cancer and non-cancer patients and no correlation with tumor aggressiveness, suggesting NO benefit in its use as a diagnostic test in thyroid cancer.

Reference:

1. Caragheorghopol A et al: Serum Galectin-3 in papillary thyroid cancer: preliminary results, 17th European Congress of Endocrinology, Dublin, 2015

The study was funded by UEFISCDI grant PN-II-PT-PCCA-2011-3.2 no.135/2012