



Management of thyroid cancer in outpatient practice

Lina Zabuliene^{1,2,5}, Ruta Einikyte³, Jurgita Urboniene⁴

¹Clinics of Rheumatology, Traumatology - Orthopaedics and Reconstructive Surgery, Faculty of Medicine, Vilnius University, Vilnius, Lithuania; ²Antakalnio outpatient clinic, Vilnius, Lithuania; ³Faculty of Medicine, Vilnius University, Vilnius, Lithuania; ⁴Infectious Diseases and Tuberculosis Hospital, Vilnius University hospital Santariskiu klinikos, Vilnius, Lithuania; ⁵Karoliniskiu outpatient clinic, Vilnius, Lithuania.

INTRODUCTION

Thyroid cancer constitutes 1% of all malignancies worldwide and is heterogeneous in terms of histology, clinical presentation, treatment response and prognosis. The annual incidence of thyroid cancer varies considerably by geographic area, age and sex [1]. The incidence of thyroid cancer is increasing over time in some European countries, USA and Canada. The increase in thyroid cancer incidence in Lithuania, observed over the last 20 years, has raised public concern about its association with the Chernobyl nuclear power plant accident in 1986 [2]. It seems that the increase in thyroid cancer incidence can be attributed mainly to the changes in the management of non-palpable thyroid nodules with the growing application of ultrasound-guided fine needle aspiration biopsy in clinical practice.

Differentiated thyroid cancer accounts for most thyroid cancers and is characterized by an indolent tumour and a good prognosis. Follow-up and adequate treatment of patients with thyroid cancer is important in everyday routine practice. In the presence of persistent or metastatic disease, an undetectable serum thyroid stimulating hormone (TSH) (<0.1 mIU/l) should be maintained during follow-up. In patients free of disease, regardless of their initial risk class, levothyroxine therapy may be shifted from suppressive to replacement [1, 3–5].

OBJECTIVE

The aim of the study was to evaluate the peculiarities of clinical and pathologic characteristics of patients with thyroid cancer, and their management after surgery.

MATERIAL AND METHODS

We conducted retrospective review of medical records of 116 patients with thyroid cancer after thyroid surgery followed up in Vilnius Antakalnio outpatient clinic. We recorded demographic, clinical characteristics, thyroid cancer morphology and extension, treatment and TSH changes.

Statistical analysis was performed using software SPSS version 20.0. Categorical variables were reported as numbers and percentages, and continuous variables as mean and SD. The between-group differences were examined with ANOVA test coupled with Fisher's LSD post-hoc test. For categorical variables the significance of differences among the groups was evaluated with the χ^2 test. The significance level chosen to test statistical hypotheses was 0.05.

RESULTS

Mean patients' age was 57.24±16.45 years (87.1% female). Mean age at surgery was 49.04±15.56 years. 46.8% patients were 41–60 years old at the time of surgery (Figure 1). Mean body mass index was 27.38±7.27 kg/m². 48.1% of patients have had normal weight and 38.3% of patients were obese.

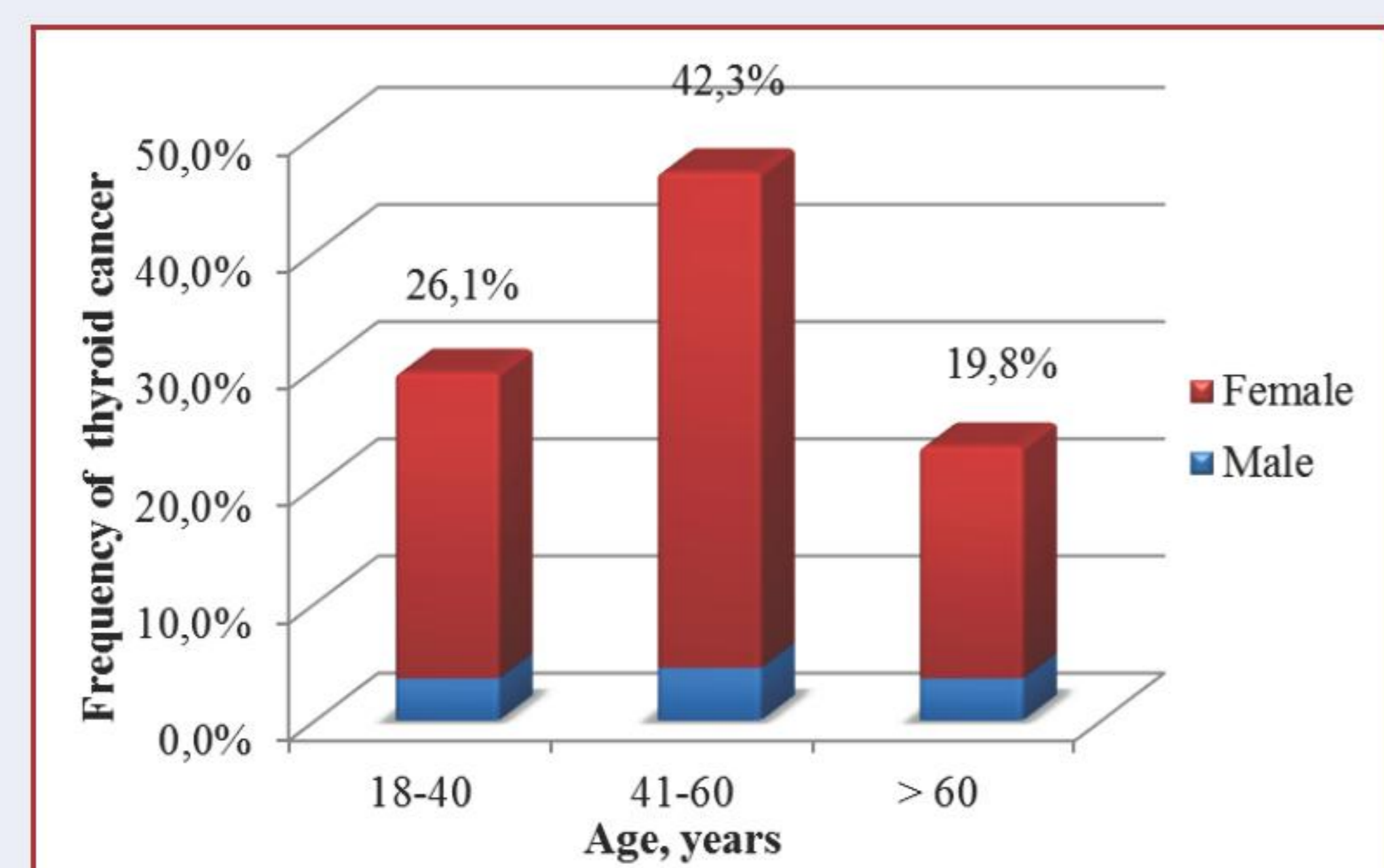


Figure 1. Distribution of patients with thyroid cancer by age at the time of surgery

Before surgery 88.8% of patients had multinodular goitre. 107 patients had papillary thyroid cancer, 5 medullary, 4 other type. 67.3% patients were diagnosed at stage 1, 9.6% at stage 2, 19.2% at stage 3 and 3.8% had stage 4 thyroid cancer.

Table 1. Distribution of patients by cancer type, cancer stage and extra thyroid extension

Variable	N (%)
Cancer type, N=116	
Papillary TC	107 (92.25%)
Medullary TC	5 (4.30%)
Other type TC	4 (3.45%)
Cancer stage, N=104	
Stage 1	70 (67.3%)
Stage 2	10 (9.6%)
Stage 3	20 (19.2%)
Stage 4	4 (3.8%)
Extra thyroid extension	
Capsular invasion, N=96	22 (22.9%)
Lymph node metastases, N=99	19 (19.2%)
Vascular invasion, N=93	13 (14.0%)

22.9% patients had capsular invasion, 14.0% – vascular invasion, 19.2% – lymph node metastases. Patients with thyroid cancer with vascular invasion were older than patients with thyroid cancer without vascular invasion (37.62±15.08 vs 49.30±15.00 years, p=0.011). Mean TSH before surgery was 2.01±1.87 mIU/l. Neither the presence of extra thyroidal extension, nor vascular invasion, nor cancer stage was associated with TSH levels.

Total thyroidectomy was performed in 90.5% of patients and hemithyroidectomy in 9.5%. Radioiodine was administered to 94 patients.

Patients have been followed up for 6.50±5.74 year (range 0–26). Mean daily dose of levothyroxine was 133.81±35.59mcg (1.85±0.56mcg/kg) keeping TSH suppression at the level of 0.43±0.65 mIU/l (range 0–3.63). TSH level < 0.1 mIU/l was achieved in 31.8% of patients with thyroid cancer with extra thyroid extension, TSH level < 0.5 mIU/l was achieved in 75% of patients without any extension and free of disease.

We divided patients according to duration of follow-up period into 4 groups: the first group included patients under follow-up for 5 or fewer years, the second group – patients under follow-up for 6 to 10 years, the third group – from 11 to 15 years and the fourth group included patients under follow-up for more than 15 years. Mean levothyroxine dose did not differ between I, II and III groups of patients (Figure 2). Mean levothyroxine dose administered to patients under follow-up for more than 15 years was higher than dose administered to patients under follow-up for 5 and fewer years after surgery (127.13 ± 28.98 vs. 156.08 ± 32.89, p=0.008).

Levothyroxine dose correlated with patient's weight (r=0.425, p<0.0001) (Figure 3).

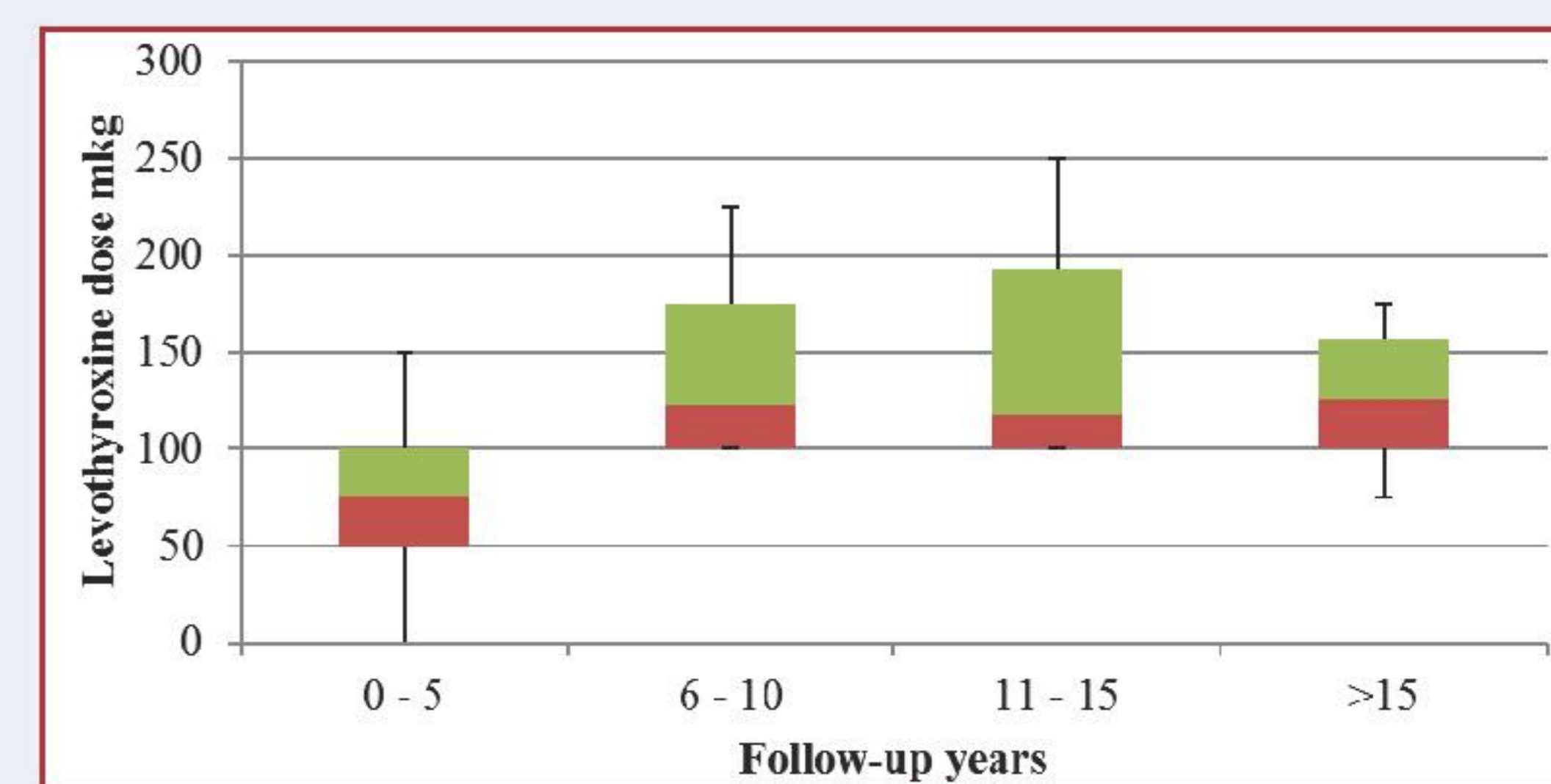


Figure 2. Levothyroxine dose in groups of patients by follow-up duration

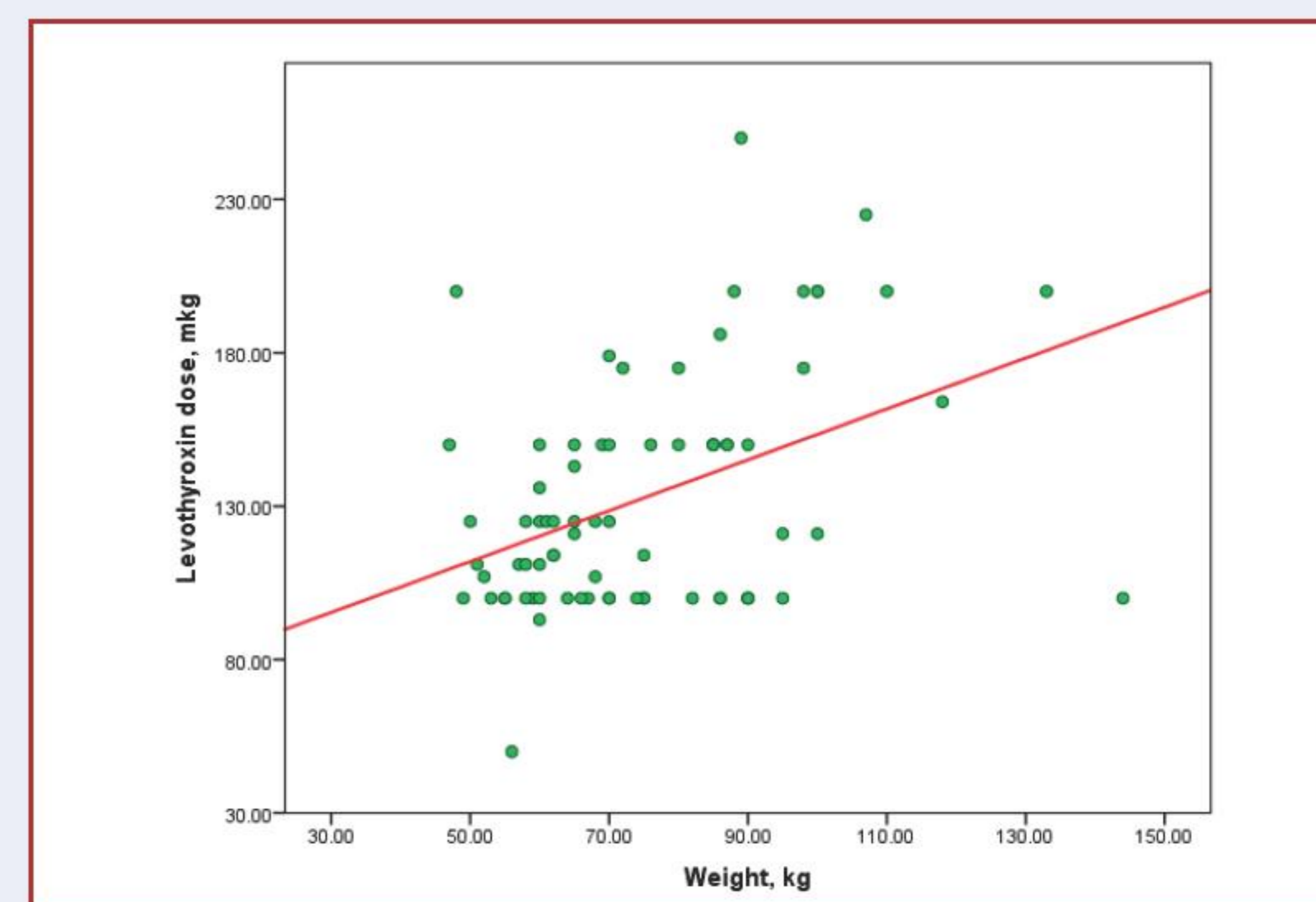


Figure 3. Correlation of levothyroxine dose and patient's weight

CONCLUSIONS

Most frequently thyroid cancer is diagnosed in 41–60 years' women and presents as multinodular goitre, and papillary carcinoma. Long-term TSH suppression after thyroid cancer surgery is kept in conformity with recommendations.

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