ISSN (Online): 2350-0530
ISSN (Print): 2394-3629

International Journal of Research -GRANTHAALAYAH
September 2020, Vol 8(09), 1 – 4
DOI: https://doi.org/10.29121/granthaalayah.v8.i9.2020.1182

STATISTICAL ANALYSIS AND COMPARISON OF DATA ON PATIENTS WITH THYROID CANCER IN THE REPUBLIC OF NORTH MACEDONIA AND THE REPUBLIC OF CROATIA IN THE PERIOD FROM 2014 TO 2018

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DOI: https://doi.org/10.29121/granthaalayah.v8.i9.2020.1182

Article Type: Research Article

Article Citation: Blagica Arsovska, Jihe Zhu, and Kristina Kozovska. (2020). STATISTICAL ANALYSIS AND COMPARISON OF DATA ON PATIENTS WITH THYROID CANCER IN THE REPUBLIC OF NORTH MACEDONIA AND THE REPUBLIC OF CROATIA IN THE PERIOD FROM 2014 TO 2018. International Journal of Research -GRANTHAALAYAH, 8(9), 1-4. https://doi.org/10.29121/granthaalayah.v8.i9.2020.1182

Received Date: 16 August 2020

Accepted Date: 31 August 2020

Keywords:
Thyroid
Cancer
Oncology
Statistics
Comparison

ABSTRACT

Thyroid cancers have been on the rise in recent years. One of the direct causes is the increase in ionizing radiation. The incidence is three times higher in women than in men. Most of the patients are over 50 years old. There is also a genetic predisposition. The aim of the paper is to differentiate between the results obtained for patients with thyroid cancer in Republic of North Macedonia and Republic of Croatia and to see if this type of cancer is on the rise in both countries and if the numbers are approximate in a period of 6 years from 2013 to 2018. The total number of newly diagnosed cases of malignant neoplasm of the thyroid gland in R.N. Macedonia in the period from 2014 to 2017 is 315, while in the Republic of Croatia in the same period the number of newly discovered cases is 8 times higher than in RN Macedonia and has a total of 2796 newly diagnosed patients. In RN Macedonia the incidence or the number of new patients with thyroid cancer for both sexes is increasing. The increased incidence is probably due to the increased increase in diagnosis of the disease in the early, subclinical stages (small papillary carcinoma). Survival from thyroid cancer depends on the stage at which it is detected, generally the percentage of survivors is high. Due to the possibility of recurrence, regular check-ups are required.

1. INTRODUCTION

Thyroid cancers have been on the rise in recent years. Thyroid cancer is not the most common neoplasm, but it is the most common malignant tumor of the endocrine system. One of the direct causes is the increase in ionizing radiation. According to estimates by the International Agency for Research on Cancer, in 2012 around 300,000 people worldwide were diagnosed with thyroid cancer, and in Europe less than 53,000 people. In Macedonia, the incidence of thyroid cancer for both sexes is 56 cases per 100,000 population, while the number of deaths is 14 cases per 100,000 population.

The incidence is three times higher in women than in men. Most of the patients are over 50 years old. There is also a genetic predisposition.

Pathohistologically, the most common percentage is papillary carcinoma in 75%, less often follicular carcinoma (10%), medullary (5%), anaplastic - the least common.

Thyroid nodules (nodules) in the thyroid gland are a common finding of ultrasonography, especially in women. They are usually benign. In 95% of cases, thyroid cancers present as a nodule. Symptoms and signs of thyroid nodules are:

- Painless lump or nodule that is hard, irregular and immobile. This is also the most common sign of thyroid cancer;
- The lymph nodes may be swollen (regional lymphadenopathy) and the voice may become hoarse as the tumor presses on the nerves leading to the vocal cords (larynx);
- Some patients may have a feeling of tightness or a blocked throat and have difficulty breathing (stridor) and swallowing (dysphagia).

The prognosis is good compared to other neoplasms that can occur in the human body. The total survival of patients with papillary type of cancer is 94%, with follicular 85%, medullary 79%.

Given the fact that thyroid disease is becoming a major public health problem in the world, prevention, early diagnosis and timely treatment are the best ways to reduce the global growth of thyroid cancer, including all other thyroid diseases. [1], [2], [3], [4], [5], [6], [7], [8], [9]

2. MATERIAL AND METHODS

Data for the patients diagnosed with thyroid cancer in Republic of North Macedonia were obtained from the Cancer Registry of the Republic of North Macedonia and The Institute of Public Health – Skopje, Republic of North Macedonia (Center for statistical processing of health data, journalism and education) in a period of 5 years from 2014 to 2018.

Data for the patients diagnosed with thyroid cancer in Republic of Croatia were obtained from the Cancer Registry of the Republic of Croatia, Croatian Institute of Public Health in a period of 5 years from 2013 to 2017. There were no available data for thyroid cancer patients for 2018.

The results were detailed, analyzed and statistically presented in the paper in tables and graphs.

The aim of the paper is to differentiate between the results obtained for patients with thyroid cancer in both countries and to see if this type of cancer is on the rise in both countries and if the numbers are approximate.

3. RESULTS AND DISCUSSION

Table 1: Number of newly registered cases of malignant thyroid neoplasm in the R.N. Macedonia, period 2014 - 2018

Period (Year)	Malignant thyroid neoplasm	Rate per 100,000 inhabitants
2014	59	2.8
2015	88	4.2
2016	93	4.5
2017	75	3.6
2018	78	3.7

Table 1 presents the total number of patients with thyroid cancer over a period of 5 years in RN. Macedonia. The data were obtained from the Cancer Registry of the Republic of Macedonia, Institute of Public Health - Skopje (Center for Statistical Processing of Health Data, Journalism and Education).

In RN Macedonia in a period of 5 years there were a total of 393 patients with present malignant neoplasia of the thyroid gland.

In 2014 there were 59 patients diagnosed with malignant neoplasia of the thyroid gland, in 2015 there were 88 patients with the same diagnosis. In 2016, the number of patients diagnosed with malignant neoplasia of the thyroid

gland is the highest in these 5 years and it counts 93. In 2017 there were 75 diagnosed patients while in 2018 there were 78 diagnosed with malignant neoplasia of the thyroid gland.

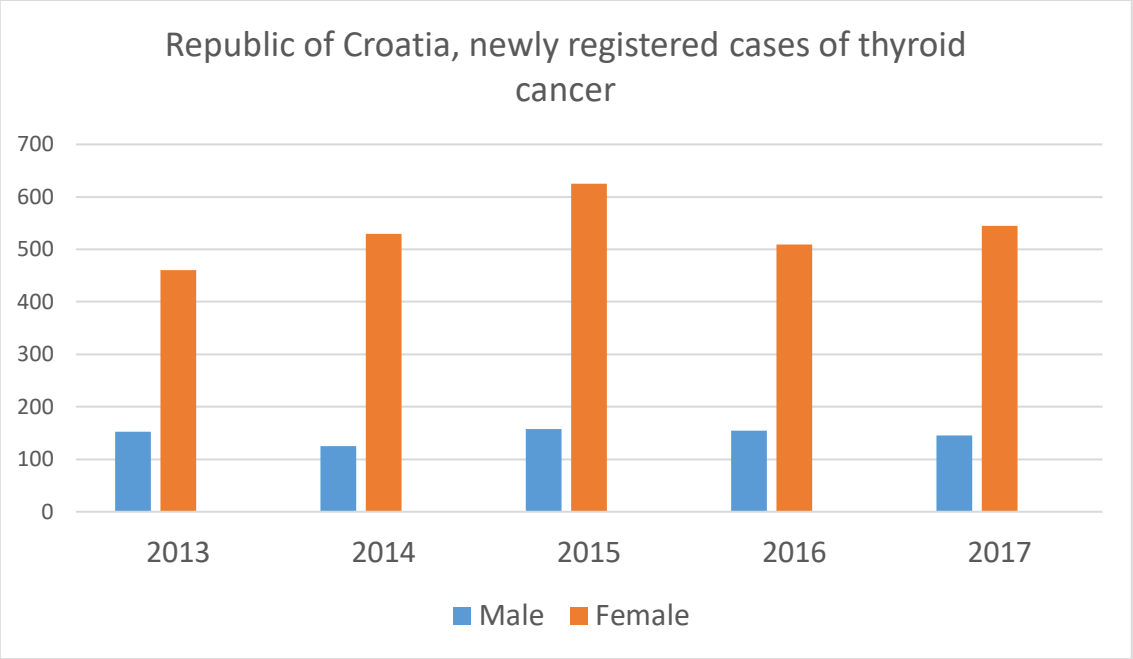

Chart 1: Number of newly discovered cases of Thyroid cancer in Republic of Croatia during the period of five years

The total number of diagnosed cases in 2013 in the Republic of Croatia is 613, of which 153 are male and 430 of the patients are female.

In 2014, there were 655 inhabitants, of which 125 were men and 530 were women.

In 2015, the number of newly diagnosed cases was 787, of which 158 were male and 629 were female.

In 2016, the number of newly discovered cases was 664, of which 155 were men and 509 were women.

In 2017, the number of newly diagnosed cases was 690 of which 545 were women and 145 were men.

The total number of men suffering from malignant neoplasia of the thyroid gland in the period from 2013 to 2017 is 736, while the number of newly diagnosed patients in the same period is 2673. According to the obtained data, the most diagnosed patients are aged 60 to 64 years (425 total newly diagnosed).

Table 2: Comparison of the number of newly registered cases of malignant thyroid neoplasm in the Republic of North Macedonia and Republic of Croatia 2014 2018

Year	Republic of North Macedonia	Republic of Croatia
2014	59	655
2015	88	787
2016	93	664
2017	75	690
2018	78	No available data

According to the table above in the period from 2014 to 2018 in R.N. Macedonia and R. Croatia, there is a significant increase in newly diagnosed cases of malignant neoplasia of the thyroid gland. In R.N`. Macedonia, the largest number of newly diagnosed cases was recorded in 2016 with a total number of 93 cases, while in the Republic of Croatia the number of newly diagnosed is the highest in 2015 with a total of 787.

The total number of newly diagnosed cases of malignant neoplasm of the thyroid gland in R.N. Macedonia in the period from 2014 to 2017 is 315, while in the Republic of Croatia in the same period the number of newly discovered cases is 8 times higher than in RN Macedonia and has a total of 2796 newly diagnosed patients.

4. CONCLUSION

In RN Macedonia the incidence or the number of new patients with thyroid cancer for both sexes is increasing. The increased incidence is probably due to the increased increase in diagnosis of the disease in the early, subclinical stages (small papillary carcinoma). Survival from thyroid cancer depends on the stage at which it is detected, generally the percentage of survivors is high. Due to the possibility of recurrence, regular check-ups are required.

SOURCES OF FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

The author have declared that no competing interests exist.

ACKNOWLEDGMENT

None.

REFERENCES

[1] Vrdoljak E et al; Klinicka onkologija;.Medicinska naklada ,Zagreb, 2013
[2] Prpic I et al; Kirurgija za medicinare - Skolska knjiga, Zagreb, 2005
[3] Zhu J; Oncology with radiotherapy; University 'Goce Delchev' – Shtip, Macedonia, Faculty for Medical Sciences, 2018
[4] Angelovska N et al; Radiotherapy with oncology – School book, Skopje, 2002
[5] Stephen J; Pathophysiology of diseases; Skopje 2010
[6] Hegedus L. The thyroid nodule. N Engl J Med 2004;(1764–1771.)
[7] BTA, RCP. British Thyroid Association Royal College of Physicians. Guidelines for the management of thyroid cancer 2007; 2nd Edition.; 2007
[8] Sherman S; Thyroid carcinoma; Lancet 2003 Feb (501-11)
[9] Jovanovski D et al; Radiotherapy oncology – School book; Skopje 2002