

## REVIEW ARTICLE

# COVID-19 PANDEMIC AND THYROID CANCER TREATMENT IN PERSPECTIVE OF BANGLADESH

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### Abstract

**Background:** The COVID-19 pandemic in Bangladesh is part of the worldwide pandemic of coronavirus disease 2019 which has crowded out services for both covid and non-covid patients, in a country where the health care system was already under huge stress even before the pandemic.

**Objectives:** To postpone non-urgent surgeries along with active surveillance of thyroid cancer patients to make sure the hospitals are not unnecessarily occupied.

**Methods:** Document based categorization of thyroid cancer patients, like- low risk, high risk and clinically extremely vulnerable groups who are at greatest risk of severe illness from coronavirus are to be done accordingly. Individuals with thyroid cancer are mostly not susceptible to COVID-19. However, patients with thyroid cancer (papillary or medullary) having lung metastases or undergoing certain types of cancer treatment might be at increased risk of viral infection or complications. Risk benefit ratio is checked and explained to the patient and their attendants.

**Recommendations:** As COVID-19 is spreading across the Bangladesh, hospitals are being forced to reallocate resources to the care of critically ill. So it is crucial to adhere to the advice from experts to reduce the risk of infection. All non-essential surgeries and hospital admissions can be postponed to make sure that hospitals are not unnecessarily occupied.

**Conclusion:** In the face of the COVID-19 pandemic, cancer care has had to adapt rapidly given recommendations to postpone nonurgent surgeries with active surveillance of thyroid cancer patients except thyroid tumors requiring acute airway management.

**Key words:** COVID-19, Bangladesh, thyroid cancer, surgery, radioiodine ablation

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### Background

The COVID-19 pandemic in Bangladesh is part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus was confirmed to have spread to Bangladesh in March 2020. As of 20 June 2020, there have been a total of 108,775 confirmed cases in the country, with

43,993 recoveries and 1,425 deaths.<sup>1</sup> IEDCR data shows that citizens in the age range of 21 to 40 are most highly at risk of catching the virus, making up 50% of confirmed cases. Around 70% of deaths have been those aged over 50. As a result of high infection risks in hospitals, multiple hospitals are closing down. A number of hospitals have been designated specifically for covid patients and to that extent,

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the pandemic has crowded out services for other non-covid patients, in a country where the health care system was already under huge stress even before the pandemic.<sup>2</sup>

### Introduction

Facing the realities of the corona virus disease 2019 (COVID-19) pandemic, governments around the world have implemented societal interventions such as “social distancing” measures, “stay at home” orders, border closure, and nationwide lockdowns. The underlying goal is to curtail all non essential population movement in an attempt to limit the rate of spread of this virus. Similar measures have been undertaken in the medical community to prioritize patient encounters to those necessitating timely evaluations and treatment.<sup>3</sup> However these measures face challenges in Bangladesh, a lower middle income economy with one of the world’s densest populations.<sup>12</sup> There are around 1.3 to 1.5 million cancer patients in the country[4]. The incidence of thyroid cancer is .99%.<sup>5</sup>

Several populations are considered to be at higher risk of complications of a COVID-19 infection. These include immunocompromised patients such as those undergoing active or recent oncologic treatment. Mortality rates among patients with cancer have been reported to be 29%. In a nationwide analysis of COVID-19 cases in China, patients with cancer were noted to have a 39% rate of severe events as compared with 8% in the noncancer population. These severe events included intensive care unit admissions requiring ventilation or death.<sup>3</sup>

### Discussion

Thyroid cancer and treatment options

Thyroid cancer represents 1.5% of all cancers. The annual incidence of thyroid cancer varies from 0.5 to 10 per 100,000 populations worldwide. Exact incidence of thyroid cancer in Bangladesh is not known. One study at the Institute of Nuclear Medicine and Thyroid clinic in the then Institute of Post Graduate Medicine and Research (IPGMR), Dhaka reviewed 2629 thyroid patients from January 1994 to June 1995, and found thyroid carcinoma in 2.58% of patients.<sup>13</sup> Studies on histopathological

features revealed 85-90% of their study cases were papillary thyroid carcinoma (PTC) and 10-15% were follicular carcinoma.<sup>14</sup>

Several forms of thyroid cancer have different staging systems. For example, some thyroid cancers start at Stage 1 and can progress to Stage 4. But there is also a type called “anaplastic” which starts at Stage 4 because it is too hard to treat. Some thyroid cancer stages are based on age. For people younger than 45 who get papillary and follicular thyroid cancer, the only stages are Stage 1 and Stage 2. These stages are based on whether the cancer has spread. For older patients, two more stages are added. The seriousness of those advanced stages is based on whether the cancer has grown outside the thyroid gland and how far it has grown into the neck.

As with most cancer, thyroid cancer can be treated with surgery, chemotherapy, radiation therapy or a combination. Other options specific to thyroid cancer are available and include radioactive iodine treatment, thyroid hormone therapy, targeted therapy etc.<sup>6</sup>

Thyroid cancer treatment in the era of COVID-19 infection

People who are undergoing cancer treatment meet the definition of being immunocompromised. However, unlike many other types of cancer, the majority of thyroid cancer patients are not receiving chemotherapy or other treatment that would deplete the immune system and cause them to be immunocompromised. The majority of individuals with thyroid cancer are likely not more susceptible to COVID-19. However, individuals with metastatic thyroid cancer (papillary or medullary) may be at increased risk of viral infection or complications if they have lung metastases or if they are undergoing certain types of cancer treatment.<sup>7</sup>

### Surgery

The most common initial treatment for thyroid cancer is surgery to remove the thyroid tumors. Because of the current COVID-19 pandemic, many surgeries that were scheduled for thyroid cancer have had to be delayed, raising concerns about receiving timely care for thyroid cancer.

Most thyroid cancers are very slow growing tumors, and the chance of thyroid cancer worsening if surgery is delayed by several months is extremely low. This is true even if there is spread of the thyroid cancer to the local lymph nodes in the neck.<sup>8</sup>

For patients with thyroid cancers categorized as 'low risk' (where progression is considered to be slow) surgery may be delayed until a time when it is considered safer to proceed. Surgery may also be deferred for patients considered susceptible to severe COVID-19 infection or who may need intensive care monitoring after surgery.<sup>9</sup> Surgery restricted to patients likely to have survivorship compromised if surgery not performed within next 3 months. Surgical cases that need to be performed as soon as feasible:

- Thyroid cancer requiring acute airway management
- Resectable anaplastic or poorly differentiated thyroid cancer without BRAFV600E mutation
- Progressive/ clinically aggressive differentiated or medullary thyroid cancer
- Large suspected thyroid malignancy with documented progression
- Large goiters with significant symptomatic airway compression.<sup>3</sup>

### **Radioiodine ablation**

Radioactive iodine (RAI) therapy is often used for thyroid cancer patients after having surgery and typically involves several visits to a doctor or healthcare facilities. RAI is often used to eliminate any normal (non-cancerous) thyroid tissue or to decrease the chance of recurrence even when all thyroid cancer appears to have been surgically removed. In most cases radioiodine therapy is not urgent and can be safely delayed. Delays of six months or even longer do not appear to negatively affect the course of thyroid cancer in patients.<sup>8</sup>

In general, treatment with RAI is more urgent for patients who have papillary or follicular thyroid cancer who have distant metastases to the lungs or other body parts, particularly if growth of the metastases have been observed.<sup>8</sup>

With the self isolation period ahead of RAI treatment and the requirement for a negative COVID-19 screening swab before treatment, the risk of the patient falling ill with COVID-19 whilst radioactive is minimized. On discharge, patient needs to have a letter with details on their treatment and radiation restrictions taking into account the potential scenario for subsequent admission with COVID-19 whilst still radioactive.<sup>10</sup>

### **Chemotherapy or targeted therapy**

For the rare thyroid cancer patients who are receiving chemotherapy or multikinase inhibitors (such as Lenvatinib or Sorafenib) are at increased risk of severe illness from COVID-19 and should follow government advice regarding shielding.<sup>9</sup>

### **Previously treated**

Patients who have previously received treatment for thyroid cancer such as surgery, with or without radioiodine (remnant ablation or radioiodine therapy), are not considered at higher risk of infection from COVID-19.<sup>9</sup> Having a previous diagnosis of thyroid cancer and receiving thyroid hormone medication is not a known risk factor for getting COVID-19 or being more severely affected by it.<sup>8</sup> So patients on suppressive doses of thyroxin (i.e. have a TSH target of <0.1mU/l) should continue on their current dose. Being on suppressive dose of levothyroxine does not increase the risk of COVID-19 infection.

Patients who have previously received external beam radiotherapy to the neck may be at increased risk of severe illness with coronavirus and should also consider self-isolating.<sup>9</sup>

### **Recommendations**

Although there is not enough information regarding the relationship between thyroid conditions and susceptibility to COVID-19, there is currently no reason to believe that most people with thyroid disease are at increased risk to contract this novel corona virus or to experience complications.<sup>7</sup> As COVID-19 continues to spread across the Bangladesh, hospitals are being forced to reallocate resources to the care of critically ill. So it is crucial to adhere to the advice from experts to reduce the

risk of infection. In perspective of Bangladesh we do have some recommendations for the management of patients having thyroid cancer:

- People classed as clinically extremely vulnerable are strongly advised to stay at home as much as possible and keep visits outside to a minimum along with additional actions to prevent themselves from coming into contact with the virus
- People who are not clinically extremely vulnerable should follow the guidance on staying alert and safe (social distancing)<sup>11</sup>
- Most surgeries for differentiated thyroid cancers and medullary thyroid cancers can be safely deferred without need for medical therapy
- Consider TSH suppression for differentiated thyroid cancers
- Anaplastic, poorly differentiated, or progressive/ advanced differentiated and medullary thyroid cancers with targetable mutations may be candidates for targeted systemic therapy
- Patient with distant metastases can be treated with radioiodine ablation with self isolation period and negative COVID-19 screening swab before treatment
- Coordination of care with other health care providers/ facilities according to resource availability and travel restrictions.<sup>3</sup>

### Conclusion

In the face of the COVID-19 pandemic, cancer care has had to adapt rapidly given recommendations to postpone nonurgent surgeries. Most cases can be safely postponed with active surveillance, including most differentiated and medullary thyroid cancers except thyroid tumors requiring acute airway management.<sup>3</sup> In the case of an upsurge of people who belong to the vulnerable groups contracting COVID-19, they may require hospitalization and intensive care. All non-essential surgeries and hospital admissions should be canceled immediately to make sure the hospitals are not unnecessarily occupied.<sup>12</sup>

### Conflict of interest:

All authors declared, there is no conflict of interest.

### Contributions:

Rifat MA prepared the manuscript and submitted. All other authors read, revised and participated in coordination of this article.

### References

1. COVID-19 Pandemic in Bangladesh- Wikipedia [online, cited 2020 June 20] . Available from: URL: <https://en.m.wikipedia.org>
2. Covid-19: A reality check for Bangladesh's healthcare system [online, cited 2020 June 20]. Available from: URL: <https://www.bd.undp.org>
3. Jozaghi Y, Zafereo ME, Perrier ND, et al. Endocrine surgery in the Coronavirus disease 2019 pandemic: Surgical Triage Guidelines. *Head & Neck*. 2020;42: 1325-1328. <https://doi.org/10.1002/hed.26169>
4. Hussain SA. Comprehensive update on cancer scenario of Bangladesh. *South Asian J cancer*.(2013) 2:279.doi:10.4103/2278-330x.119901
5. Globocan 2018: Bangladesh- The Global Cancer Observatory. Available from: URL:<https://gco.iarc.fr>
6. Understanding Thyroid Cancer [online, cited 2020 June 19] Available from: URL: <https://www.regionalcancer.org/cancer-types/thyroid-cancer/>
7. AACE Position Statement: Coronavirus (COVID-19) and People with Thyroid Disease. Available from: URL: <https://pubmed.ncbi.nlm.nih.gov/26856305/>
8. Novel Coronavirus (COVID-19) and the Thyroid: Frequently Asked Questions. Available from: URL: <https://www.thyroid.org/covid-19/coronavirus-frequently-asked-questions/>
9. Thyroid cancer and coronavirus (COVID-19). Available from: URL: <https://www.btf-thyroid.org/thyroid-cancer-and-coronavirus>
10. Thyroid cancer: radioactive iodine treatment during COVID-19 pandemic (2). Available from online: [www.rcr.ac.uk/cancer-treatment-documents](http://www.rcr.ac.uk/cancer-treatment-documents)
11. Guidance on shielding and protecting people who are clinically extremely vulnerable from COVID-19-GOV.UK. <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>
12. COVID-19 and Bangladesh challenges and How to address them. *www.frontiersin.org* [online, cited 2020 June 20] Available from: URL: <https://doi.org/10.3389/fpubh.20>
13. Alauddin M, Joarder AH. Management of thyroid cancer. *The ORION MedicalJournal*. 2004; 18: 163-166
14. Albores SJ, Gould E, Vardaman C, Vuitch F. The macro follicular variant of papillary thyroid carcinoma: a study of 17 cases. *Hum Pathol*. 1.991; 22: 1195-1205.