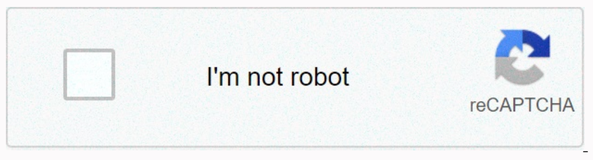

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Thyroid nodule guidelines 2019

Clinical Guidelines of Oncology Open Access Published: 31 January 2020 Clinical and Translation Oncology 22, 223–235 (2020) Quote this article 3757 Access 4 Citations 33 Altmetrics Metrics Thyroid Carcometer is the most frequent endocrine malignyer and accounts for around 3% of global cancer incidents. Different histology and clinical scenarios make unnecessary a multidiscippline approach including new diagnostic and surgical methods, radiofartic and systemic therapy. This guide updates several aspects of management of thyroid cancer. SEOM guidelines were developed with the consensus of ten members of the Spanish Society of Medical Oncology (SEOM). In order to evaluate the level and quality of evidence and establish a class of recommendation in the different statements of this guideline, we based ourselves on the Infectious Diseases Society of America-US Public Service Grading Services (Table 1). The final text was reviewed and approved by all authors. The aim of this document consists of providing key practical recommendations on thyroid cancer management. Thyroid cancer is the most common malignant and accounts for 3.1% of global cancer incidents. In 2018, 567,000 new cases were estimated worldwide, with differences by geographic areas, ages and genders. The rate of world age-adjusted incidents in women is three times higher than in men: 10.2 and 3.1 per 100,000, respectively [1]. The incidence estimates thyroid cancer in Spain in 2018 was 13.7 per 100,000 in women and 3.8 per 100,000 at [2]. A higher incidents were found in developed countries, compared with the developers [1] and race-ethnic differences could be found [3]. However, despite the incidence differences, mortality rates are quite similar between countries, sex and roughly the same of all ethnic groups[3]. Incidents have increased phasing worldwide in the last decade, mostly high in small papile carcinoma as the main consequence of a better diagnosis accuracy and overdiagnosis of indolent diseases[4]. Only risk factors that are well-established for thyroid cancer will inlute radiation, particularly when exposure to childhood, although there is evidence that other factors (obesity, smoking, exposure to hormones, and certain environmental pollutants) may play a role [1]. Based on the pathology, thyroid cancer must be sorted in subtypes: differentiated, medicine, wrongly differentiated and anaplastic cancers. Differentiated thyroid cancer (DTC), which arise from follicular thyroid cells, The most common type and is subdivided into thyroid carcometer papile thyroid, 85% of thyroid cancer, thyroid carcinabian follicular, 2-5%, and Hürthle-cell accounting for 2% [5]. Certain subtypes of papile cancer: height cell variants, column cell variants, and broadcasting sclerosing variants, have a worse prognosis, such as making larger variants of follicular cancers. Medullary thyroid carcium, thyroid C-cell determines, versus for 4% thyroid cancer. Unfortunately differentiated, 6%, and anaplastic thyroid carcium, 1%, are associated with aggressive disorder [5]. Although most cases are sporadic, 3–9% DTC are familiar, mostly components of cancer syndrome: Cowden's disease, adenomatory polymposition familial, and Werner's syndrome, are caused by gemline loss – in mutation loss – at PTEN, APC, and WRN5, respectively. 20% of thyroid-related thyroid carcometers are related to multiple neoplasin inheritance (HAND) type 2 syndrome, caused by the pre-autosomal dominant-of-function myths of the RET-oncogene. There are three subtypes: MEN2A, MEN2B and Thyroid Cancer Familial (FMTC). 98% of MEN2A, 99-100% of MEN2B, and 85% of FMTC cases, introduced mutations at RET. 6% of patients with clinically sporadic medical thyroid cancer carry a jemline mutation at RET[5]. The majority of patients have an excellent prognosis, with a relative 5-year overall relative to 98.2% for all stages (99.9% spotted; 98.2% regional; 56.2% distant disease)[3] and, despite increased occurrence, mortality rates from the disease remain stable and low, with age-adjusted rates of 0.4 and 0.5 per 100,000 men and women [1]. A radological study by ultrasound (US) must be carried out in any patient with a thyroid gland alternative detected in physical examination, or with an abnormal image/nodular incident observed by any test imagined [6,7]. Although around half of the population may have thyroid noses, TC (thyroid cancer) diagnoses that are rare (about 5% of all thyroid duits). Some American characteristics can increase the specificity for diagnosis beyond 90 (microscopicization, hypoecogenicity, higher forms of higher irregular margins, solid appearance, absence of halo, intranodular blood flow[8]. In this sense, the American Thyroid Association (ATA) has stratify the US results in five risk groups (from highly suspicious of benign explicitly) to justify the performance of the fine-needle aspiration (FNA)[9]. Regardless of stratification risk, an FNA is recommended in any thyroid node > 1 cm or of those smaller but suspicious clinical (top prior to irradiation courses, family history of TC, suspicious features of palpation and/or presence of nose subjects). However, in case of low-risk ecographic patterns, such as in cystic nodil or spongiform or isoechoic without halo or hyperechoic nodules, FNA recommends when size is >2 cm. Due to early nodal disemination (>90% of cases featuring at least microscopic nodal participation in histopathological analysis), the US can detect nodal participation in more than 20% of cases [10]. Based on FNA results, The 2017-version of Bethesda classification includes six scenarios (from the non-diagnostic/unsatisfactory-Bethesda mine to die based on malignancy-Bethesda VI) and their respective risk of malignancy based on the inclusion or not of neoplasm and papillary-like nuclear characteristics [11]. This classification is also updated to evaluate performance of molecular testing as well as their hypothetical roles to further refine the estimate of malignancy in thyroid thyroid nose. In this way, several molecular tests based on transcriptomic analysis, mutational panels (most of them focused on BRAF, HRAS, DAB, PIK3CA and youth fusion such as PTC1, PTC3, PAX8/PPARγ, RET, NTRK, ALK, etc.) and microRNA classification are currently being developed, in spite of their real chances for routine clinical applications should always overcome several methodological, availability and/or clinical efficiency issues [12]. Thyroglobulin preoperative routine (Tg) is not recommended although measurements of calcitonin serum can be useful for medical thyroid cancer (MTC) even with higher sensitivity than FNA in this context [8]. Patient recommendations with suspicion of thyroid changes during the physical examination, or in which is an abnormal nodular image/incident observed by any imaginary test should undergo ultrasonic thyroid strokes (level of evidence: I grade in recommendation: A). It should be completed with an FNA in any thyrodyl with no suspicion and clinical suspicion. Routine intravenous prep biomarkers can be useful in MTC scenarios (level of proof: III, class of recommendation: B). Most directives recommend total thyroidom in patients with nodules > 4 cm and all tolerated surgical treatments, since it is associated with greater disease-free survival, covering the possibility of multiculturation of papid carcinoma (30-40% of patients), it allows the use of radioactive iodin as a diagnostic and therapeutic tool and facilitates the monitoring of Tg (still along with autoantibodies against Tg, TgAb) as a marker of persistence or recurrence disorder. It decreased the need for second surgery. For patients with thyroid cancer > 1 cm and <4 cm without extrathyroidal extension, and without clinical evidence of any lymph node metastases (cN0), the initial surgical procedure can also be the bilateral procedure (total near or total thyroidectomy) or the unilateral procedure (lobectomy). Thyroid lobectomy alone mesh butter sufficient treatment for small (<1 cm), low-risk, unifocal, intrathyroidal papillary carcinomas in the absence of head prior and neck irradiation or radiologically or clinically involved cervical nodal metastases[9]. Thyroidectomy without prophylactic central neck dissection mesh butter is proper for small thyroid papillary carcinomas (T1-T2), non-invasive, with negative nodes (cN0) and for most follicular carcinomas. Node dissections must be performed equally compartments. Central therapeutic dissection (level VI) must be associated with total thyroidectomy when there are clinically affected nodes. Prophylactic central dissection (ipsilateral or bilateral) should be considered in patients with papillary thyroid carcinoma with clinically unaffected lymph nodes in the central compartment (cN0), with advanced primary tumors (T3 or T4;> 4 cm or with invasion of neighboring or affect lateral nose (CN1b). Therapeutic lateral lateral dissection of the lateral material compartments should be made of patients with metastatic nose. Lateral dissection does not indicate [9]. In the case of thyroid cancer locally advanced, the surgical treatment will be specific according to the affected anatomical structure, which seeks control of the entire macroscope disorder and preservation function. For incredible resolution or high-risk R1/R2, neoadjuvant therapy and targeted agents can be considered; even low proof levels (case reports). Recommendation thyroidomiumy is recommended in case indicated in DTC, mainly in size >4 cm (level of evidence: I, recommendation class: A). All patients should have a preoperative ultrasound evaluation in the central and lymphoma courses they plan the surgical procedure (level of evidence: III, Class of recommendation: B). Table 1 Infectious Diseases Corporation of America-US Public Service Grading SystemStaging and risk classification classification/TNM 8th edition edition are used to predict specific survivor disorders. Clinical estaging is based on inspection/palpation and imaging (ultrasound, CT, PET-CT, etc.) of thyroid glands and regional nods. Pathological Prevent (pTNM) based on all information used to stand clinical further histological examination plus the description of surgeons in deep [13]. Tables 2 and 3 show TNM stand classification. Other factors involving the risk of persistent or repeated illness are included in the ATA classification (Table 4). Table 2 Differentiated Thyroid Carcinaom TNM-staging AJCC UC 8th EditionTable 3 Differentiated Thyroid Carcmune TNM staging AJC UC 8th EditionTable 4 ATA Risk Extraction System Estimate Risk Reduction each persistent/receipt of EspPostoperatif adjusts therapy and follow Uprisk for local recurrence and distant after radical surgery depending mainly on pathological and age assessment and dictates the need for adjusted treatment and frequency and tracking type [8]. Thyroid abl ample and iodine radioactive 131I (RAI) aims to fully eliminate tissue tissue tissue tissue tissue weave tissue and presume neoplastic cells thereby reducing the risk of recurrence and probably mortality rates. In addition, thyroid ablation allows for an earlier detection of recurrence based on intravenous Tg measurements and eventually about 131I whole-body scan (WBS) during follow up [9]. Thyroid-stimulating hormone (TSH) supreme therapy (serum TSH <0.1 mU/l) and levothyroxine (LT4) is required in patients with evidence of persistent diseases and provides to control the postsurgical hypotheidist and prevents the TSH-dependent growth of residual cancer cells [14]. Rai should be awarded after TSH stimulation by removing LT4 for 4-5 weeks or by reconbining TSH administration (rhTSH) to increase the upotope [15]. Clinical decision for an adjustment treatment with RAI must be based on multidiscippline may not be at center with sufficient experience and adequate installation. As a general rule, has a consensus to offer RAI asset therapy (≥ 100 mCi, 3.7GBq; rhTSH administration or levothyroxine withdrawal) to those patients with high risk of recurrence and should be considered intermediate-risk patients with low-risk patients, based on TNM stadiumification, presented with clinical risk factors. Low doses of radiodiffer (30 mCi, 1.1GBq) after thyrodium seem to be better tolerated than standard doses achieved similar ablance rates [16]. In general, it does not recommend the administration of abalative rai in patients with DTC smaller than 4 cm and no evidence of locoregional metastasi, but might be contemplated in some specific scenarios such as disturbance and istology aggressive or vascular invasion[17]. Patient pT1b-pT2-pT3a, N0 or N1a, can be considered for low rai ablations (30 mCi, 1.11GBq). Tracking scheduling and testing to be done after surgery and consolidation treatment can vary depending on the risk of recurrence or persistent illness, histology, and response to RAI. Serum Tg assigned and US courses are the commuters of DTC followup [18]. In patients treated with total thyroidomy plus recent RAI abdominal, promoted serum levels Tg <1 ng/mL are very predisficent to an excellent response to therapy. When Tg level is detected from a patient with negative image results, the response to therapy is classified as indeterminate or biochemical incomplete. Uptake on 131I WBS is very specific (91-100%) for the presence of your tissue tissue. Fluorodoxyglugcose-positron emissions tomography (FDG-PET) is useful for evaluating the extent of diseases and defining the prognosis specifically for aggressive histology and trum serum levels above 10 ng/dL. Patients with DTC must figure out 6-12 months after primary treatment and follow-up schedule will adapt to the initial risk of persistent disease/repetition and response to therapy [19], As shown in Fig 1.Fig. 1Post-operation management and follow up fits on first risk for persistent/recurring diseases and response to TherapyRecormendationSecision for adjusted therapy must perform after risk assessment of an in advance multidisciplinary (proof level: III, Bespoke classes: B). Ablative RAI should be offered to high-risk patients and regarded as intermediate-risk patients (proof level: III, Class of recommendation: A). Treatment of relapse/metastatic DTCLocoregional recurrence reached up to 20% in patients, with metastas far at about 10% in 10 years. Surgery is the preferred therapy for locoregional repetitional diseases or low-volume disorders away from metastatic. RAI is now the first-line treatment for metastas away that rai-advise. The dose of RAI therapy, now, controversial, is from 100 to 200 mCi. Active surveillance can be considered patients with low volume disorders that are not apparent progression and critical structure. External radiotherapy (EBRT) may indicate that metastases are symptomatic bone and central nervous system spread. Proof of efficiency in EBRT for incredible local relapse is low and can be considered along with other locoregional treatments such as local approval. Up to two-thirds of patients with metastatic or incredible locoregional diseases lose the ability for iodine uptake leading to RAI-refracturing metastatic disease, defined as: no device in RAI in the initial diagnosis of distant metastas or locoregional recurrence; progressive untie RAI absorption after several sessions of RAI therapy; evidence of different forces of distant metastas, some of them and absolute and some others without RAI attackers to scan the body; progression of statements after an Adequate Rai treatment even with previous substantial RAI devices. Other additional criteria that play a role in the definition of RAI-refracturing the significant diseases upke in 18FDG-PET, cumulative doses total of RAI over 600 mCi, incredible primary tumors or aggressive histology DTC, such as poor differentiated, insular or Hürtle Cell carcinomas [20]. The final decision on the refractatory rai-refractatory must be taken by multidisciplinary committee and reassessed during the evolution of treatment. When a patient with DTC is classified as rai refracturing, there is no indication for further treatment RAI. No clear recommendations regarding TSH deletion is available in RAI-refracturing DTC. Intravenous bisphosphonate (e.g., zoledronic acid) or denosumab therapy is considered for bone metastas. For clinically progressive or symptomatic RAI-refractosis metastatic DTC, not otherwise amenable to local therapy, multikinase inhibitor (MKI) therapy should be considered (Fig 2). Two randomly, placebo-controlled, Phase III trials (DECISION AND SELECT) demonstrated the effectiveness of sorafenib[21] and lenvatinib [22], respectively, of these patients. Both drugs were each associated with significant statistical improvements in survival progression-free (PFS) relative to those patients treated with plasbo and were approved by worldwide regulatory authorities for RAI-refracturing metastatic diseases. Although sorafenib and lenvatinib showed an increase in the response rate with PFS versus placebo, they failed to show significant differences in overall survival due to cruise in progression. Currently, there are no clinical or molecular biomarkers that help us predict responses to these drugs. The difference between these drugs must be taken into account when deciding which is the best treatment option for each patient considering both the effectiveness and toxicity profile of these drugs. In progression of diseases, there is no actual evidence of effectiveness in sequential treatment with MKIs and patients should be considered for clinical trials.Fig. 2Treatment algorithm for advanced RAI-refracturing the DTCThere several molecular biomarkers, such as of BRAF or fusion of RET/PTC that can predict responses to specific BRAF or RET inhibitor in Advanced RAI-Refractory DTC. However, actual data is available only in phase I/II clinical trials, with no data on better treatment sequences and no formal approval in this environment. Recently, the European Medicine Agency (EMA) has approved the first agnostic therapy for misleading particulates for NTRK merger, larotrectinib. Thyroid cancer is the second most frequent hole with NTRK fusion and an incident that ranges from 5 to 25%. Larotrectinib demonstrates high sustainable response rates (including full response) to NTRK merging troops (79% of the overall unused aponsion rates of thyroid cancer) and should be considered in patient treatment strategies with NTRK switching DTC[23]. Additionally, due to the higher the target choice, toxicity profile is more favorable compared to classic MKIs.RecommandationsRAI is the first choice for RAI-advanced or returned DTC (level of evidence: III, Recommendation grade: B). Lenvatinib or sorafenib should be offered in most patients with RAI-refracturing metastatic DTC (level of evidence: I; grade of recommendation: A). MTC accounts for 2–8% of the main thyroid tumors. A thyroid disturbance and any suspicious characteristics of MTC should include immunostochemistry analysis of kalsintonin, kromogranin, carcinoembryonic antigen (CEA) and the absence of Tg. All patients should offer genetic advice and be tested for jemline mutations RET to regulate the diagnosis of a MEN2 in the family. Preoperative work includes thyroid ultrasound and ultrasound strokes with basal calcite, CEA, calcium, plasma or 24-h urine collection of metanephrines and normetanephrines. Either kalcitonin > 500 pg/mL or signs/regional symptoms/disorders should be studied with contrast-boosting CT in chest, MRI/3-phase CT at times, Axial MRI and bone stigraphy. Total thyroidtomia and central bilateral dissection (VI level) and involved in lateral course compartments (level II-V) are recommended for confusion courses ≥ 1 cm or bilateral thyroid diseases. For unilateral and <1 cm disturbance, total iroidity should be completed and course dissection contracts should be considered based on unusual levels. Metastas node residual after thyroidomium, based on unusual levels, imaginary studies or inadequate surgery could benefit from re-surgery [24]. Postoperative follow-up includes measurements of kalcitonin and CEA levels. Calcium <150 pg/mL should be evaluated along with physical examination, marked serum and ultrasound strokes every 6 months to determine the doubling time of serial measurement and concentration of calcium > 150 pg/mL, should be filled with CT chest, MRI or three-phase contrast times—boosting CT, scintigraphy bones, pelvis/accurate MRI or FDG-PET. Marking normal serum in patients symptoms and repeating negative images can follow every 6 months or consider reoperation, after excluding times metastasy. Bespoke thyroidomium, bilateral central dissection and involved in lateral course compartments are recommended for the confirmed course ≥ 1 cm or bilateral disease for MTC, Based on serum level anticipated serum calcitonin and imaginary neck (proof level: III, class of recommendation: B). Treatment of relapse/metastatic MTCLocoregional recurrence should be approached with compartmental dissection of image-positive or biopsy positive disorders in the central (VI) or lateral (level II-V) course compartments. Postoperative radiotherapy could be considered in case of MTC residual, extraordinary extension, or many node metastas and risk blocking airports, after weighing the benefits against the potential toxicity. Goal management of MTC distant diseases is loco-regional disease control, survival increase and the passage of symptoms. Spinal compression cord and pain bone metastasy requires consideration of surgery, EBRT and bisphosphonates. Residency, ablation and liver dembolization must be considered in patients with alone lungs and liver metastas. Mutations RET somatics (30–50% of sporadic and almost all MTC heirs), Race mutations along with overexpression of growth receivers vascularity growth factor (VEGF) 1 and 2, Fibroblast growth factor (FGF) and platelet-out growth factor (PDGF) are molecular growth features of MTC. Based on phase III randomly vender clinical trials and carbontine are recommended as systemic therapy in patients with symptomatic or progressive unresectable locally advanced or metastatic MTC. Both seller and cabozantinib demonstrate PFS benefits ahead of placebo with a response rate from 28% to 45% [25, 26]. Treatment decisions between both drugs should be based on the different safety profile, patient-based characteristics of patients and clinical experience. Beyond the progression on salespertaneous or carbohydrates, no other MKI therapy has demonstrated the effectiveness and treatment on clinical trials should be offered to patients. Based on promising results of clinical research and selective RET inhibitor, patients with RET mutations should be offered to participate in clinical trials and RET inibitor both in first line and in refracturing environments after the progression of MKIs.Multidisciplinary approaches, the experience of dealing with advanced MTC and the skills of the management of MKIS are required for the correct management of MTC patients advanced to the daily clinical practice. Bespoke and cabozantinib recommendations should be offered as the first-line systemic treatment for progressive locally advanced/metastatic MTC (level of evidence: i, Class of recommendation: B). Unfortunately differentiated carcinoma is an aggressive thyroid disturbance characterized by a partial loss of the characteristics of thyroid differentiation that occupies morphologically and behavior of an intermediate position between well differentiated perpiliar and follicular carcinoma and completely anaplastic carcomeium. They account for up to 10% of all thyroid cancers with a 10-year survival close to 50%[27]. Diagnostic criteria for wrongly differentiated carcinoma are based on the proposal Turin consensensus and include the following three features: (i) solid/trabecular/insular growth microscopic growth, (ii) lack of properly developing nuclear characteristics of papyrose cancer, and (ii) convolved nuclei (evidence for partial loss of differentiation of papyratic cancer), necrosis, or three or more filed per 10 high-power fields [28]. In terms of patient follow-up serum tg and TgAb levels should be assessed every 6-12 months and FDG-PET combined with CT is much more susceptible than post-therapeutic body scanners to detect persistent diseases in these patients [29]. There is no standard treatment for wrongly differentiated thyroid carcium to date. However, it is accepted that a more aggressive approach is needed to treat these tumors. If possible, a total thyroid should be made including nose lymbit dissections should be performed. RAI treatment is only successful in a subset of patients, neverthewhile, given the benefits of therapeutic potential, high-doses of RAI treatments actually recommended for all these patients. EBRT for large tumors of >4 cm with stage T3 and T4 and for patients with regional node metastas should be evaluated individually for patients as their data based on extrapolation from the science of DTC. The basis of systemic treatment of the RAI-refracturing environment is MKIs as well as DTC, as this histology subtype was included in registration study III. Chemotherapy is currently not standard in care, although positive effects have been rarely observed in some patients with platinum- and cal scheme based on [30]. Anaplastic thyroid cancer (ATC) is an aggressive form of thyroid cancer associated with a very poor prognosis. Although atc accounts for <2% of all thyroid malignacies, it's understood > 50% of thyroid-related cancers aren't thyroid. Overall survival after initial diagnosis is usually less than 6 months and survival rates 1-year at about 20% [31]. The morbidity and poor prognosis of ATC is due to either of locoregional disorders because of the many critical structures located near the thyroid or the secondary incident of metastatic disease, with nearly one half of all patients with ATC presented with metastatic diseases at the time of initial diagnosis. These most common metastatic sites include lungs, bones and brains. ATC is morphologically heterogeneous and must be distinguished from other neck tumors, including casinoma carcinoma in larin, sarcomas and lymino. Preoperatific biopsysis assessment includes iminomarkate diagnosis that can differentiate ATC from large cell lyminoma, pleomorphic sarcoma and wrongly differentiated DTC. A proper imagined work-up should have been carried out soon after the diagnosis. The FDG-PET scan is the most sensitive tool for waivers Disease. Analysis should be repeated at all stages of treatment[32]. RecommendationsHistological and imunohistochemical studies accurate in tumor samples required to exclude other forms of thyroid cancer. Preoperatific radical studies include ultrasound, CT or MRI, and FDG-PET scan to rule out austere metastas in initial diagnosis (level of evidence: III, class of recommendation: C). Treatment of local/ locoregional espSurgeRIATC disorder is rarely amenable to comprehensive reaction. Total hiroidtomia and central dissection of bilateral coup may have been carried out in extremely rare cases of localized ATC. Many reactions with total laryngectomy, esophagectomy and/or reaction of large ships have been reported in highly chosen cases in specialized centers, but mortality possibilities and morbidity are high and there is no high level of evidence to indicate that this approach improves survival. The prognosis is also affected by incomplete reaction (R2) or 'debulking', which is not generally recommended [33]. Tracheostomy may need to alleviate symptoms of patients with moderate progressive diseases, but should the impact of tracheostomy on quality of life (QoL) should be considered. Radioterapist results in terms of survival and local disease control at ATC require comprehensive or near-complete [no residual tumor (R0) or microscopic residual disturbance (R1) residential followed by high-dose radio, with or without recontacted chemotherapy [34]. However, this multimodal approach can strongly impact QoL and should be reserved for carefully chosen patients to ensure clinical benefits. A long discussion of a multidisciplinary team environment is strongly recommended. A meta-scan of 17 retrospect studies including 1147 patients looked at the impact of postoperative EBRT after radical ATC resection and found that it significantly reduced the risk of death as compared to radical alone resection (HR 0.556, 95% CI 0.419–0.737, P<0.001)[35]. Exploratory analyses demonstrated that EBRT might also confer a survival benefit in patients with stage IVA or IVB disease but not for stage IVC. For best outcomes, EBRT should be delivered as soon as achievable after surgery. Because of the improved dose distribution and the ability to reduce toxicity, intensity-modulated radiotherapy (IMRT) is the recommended approach[36]. There are some evidence of the dose–response relation. On scan of the United States National Cancer Database showed maximal benefits with doses > 60 Gy [37]. For IVA or IVB disease stages, chemotherapy custody (usually with doxorbicin, platinum agent or taxan, alone or in combination) was used. Most of the data reported on this approach came from single-institution range and the reporting clinical benefits are variables. In patients with incredible diseases, palliative EBRT has a role in control of symptoms. The goal is to usually reduce the rate of growth in the course of March and the pressure thyroiddom and the dissection of lateral and central noses should be made of non-metastatic ATC receipts. Adjusting EBRT with or without compressing chemotherapy should be offered to ATC patients with adequate performance status. Quickly discussion by a multidisciliary team is strongly recommended (evidence levels: III, class of recommendation: B). Treatment of advanced/metastatic disease disorders in ATC patients and distant metastas should be good control of symptoms, as no study randomly has demonstrated the benefits of survival or QoL. Normal systemic therapy needs emergencies to improve the generally poor results associated with ATC. Trial clinics should, therefore be promoted for patients with good Clinical PS. For patients who are not eligible for systemic treatment or clinical trials, they should discuss better support care. To date, cytotoxic chemotherapy was the main treatment for metastatic disorders, but it is associated with very low response rates and important toxicity. Recommended recommended consists of single-agent therapy with paklitaxel or doctorbubicin or combined treatment (e.g., kaboplatin/paclitaxel, docetaxel/doxorbicin) administered weekly or weekly 3-4 [38,39]. There is no efficiency evidence in MKIs available now in western countries to advance ATC. An international, multicenter, Phase II trial and lenvatinib were suspended early due to utilities (NCT02657369). Molecular profile science began eliminating the molecular drivers of ATC[40]. BRAF cortations have reported up to 40% of ATC cases. In a Phase II, open-label basket trial, patients with BRAFV600E-positive malignacies (including 16 and ATC) were treated with the inibitor dabrafenib BRAF (150 mg twice per day) plus the transmitter MEK (2 mg once per day). The overall response rate was 69 (11/16) and the treatment was well tolerated [41]. In May 2018, this combination received FDA approval for the treatment of locally advanced or metastatic ATC and the mutation of BRAFV600E. Although Ty's had only 16 patients with ATC treated with this combination; promising results can position this treatment as the first-line therapy for advanced BRAFV600E ATC patients. Other rare myths and genetic aberration can also prove to be unopenable, such as ALK and NTRK translocation. As mentioned before, larotrectinib has the first agnostic approval in Europe for the treatment of NTRK cancer changed. The initial stroke of thyroid cancer patients treated with larotrectinib also included ATC, and objective response. Prolonged ATC molecular profiles should strongly promote upfront as it can reveal promising possibilities for targeted therapy. Imunotherapy reported initial promising activity in patients with advanced ATC regardless of BRAF myths [42]. Additional research is still needed to define the role of immunotherapy in ATC. RecommendationSystemic chemediotherapy based on tax and/or antracyclines must be offered to patients with good performance status. New clinical trials can offer an opportunity to improve the outcome of atc advanced patients. Prolonged molecular profiles at ATC should strongly promote upfront and can offer new targeted therapy with higher likelihood of responses (dabrafenib-traminib for BRAFV600E mutated and larotrectinib for NTRK Merger ATC). Registration clinics should be promoted (evidence level: II, Recommendation class: C).

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Summary Guidelines to Prevent Opportunistic Infection Among Hematopoietic Stem Cell Transplant Infections. Clinical infectious disease. 2001;33 (2):139–44.CAS PubMed Google Scholar Download ReferenceSThe Guide was reviewed by Dr. Ismael Capel (Department of Andocrinology, Parcul Taulí Hospital Universitaritari. Institute d'Envestigació I Innovació Parc Taulí I3PT. Universitat Autnoma de Barcelona. Sabadell, Spain), Dr. Carles Zafon (Department of Endocrinology, Hospital Universitaritari d'Hebron, Barcelona, Spain) and Dr Joan Castell (Department of Nuclear Medicine, Hospital Universitari d'Hebron, Barcelona, Spain). We thank them for their support contributions and valid. 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