

EVIDENCE-BASED QUALITY INDICATORS FOR THE DIAGNOSIS AND TREATMENT OF MEDULLARY THYROID CANCER

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CONCLUSION

- 15 evidence-based **quality indicators** were selected to assess and improve the **quality of care** for patients with medullary thyroid cancer.
- The strengths of these quality indicators include the **international, multidisciplinary** development process.

BACKGROUND

Medullary thyroid cancer (MTC) is a rare neuroendocrine malignancy originating from the C-cells of the thyroid gland. Its complex clinical presentation and potential for aggressive behavior underscore the necessity for high-quality care to improve patient outcomes and reduce mortality. To achieve this, well-defined quality indicators (QIs) are essential. Currently, no formal set of QIs exists specifically for MTC.

MATERIALS AND METHODS

- Modified RAND Delphi method
- Extraction candidate indicators from evidence-based guideline
- January to September 2024
- 14 health care professionals

International: Netherlands and Canada

Multidisciplinary: nuclear medicine physician, radiation oncologist, medical oncologist, pathologist, endocrinologists, surgeons

- Three rounds: an initial survey, a teleconference discussion, and a final survey.

RESULTS

In November 2023, 29 potential indicators were extracted: 7 structure indicators and 22 process indicators, with no outcome indicators. The first survey round, conducted between January and May 2024, saw 12 of 14 expert panel members participate. The results classified 14 indicators as appropriate, 15 as uncertain, and none as inappropriate. From May to August 2024, 13 of 14 panel members attended meetings. During these meetings, 9 indicators were excluded (4 redundant, 5 lacking evidence). Additionally, multiple indicators were combined: 2 appropriate indicators into 1, and 6 uncertain indicators into 2. 10 appropriate indicators were rephrased, and 5 remained unchanged, resulting in 15 final quality indicators.

Table 1. 15 Quality Indicators

- 1 Preoperative ultrasound is performed using standardized reporting systems for review of suspicious central or lateral neck lymph nodes (i.e. ATA or TIRADS).
- 2 Calcitonin serum levels are determined prior to surgical management for biopsy proven MTC.
- 3 Children and adults with Multiple Endocrine Neoplasia 2 are managed by a multidisciplinary expertise tertiary care referral center.
- 4 Genetic testing is considered on all patients with medullary thyroid cancer, with a clinical geneticist or endocrinologist being part of the treatment team.
- 5 A multidisciplinary team, including experienced surgeons, endocrinologists, clinical geneticists, pathologists, and palliative care experts, manage patients with MTC given the perioperative management complexity.
- 6 Serum levels of calcitonin and CEA are measured within 3 months postoperatively, and these should be measured every 6 months for one year, and then yearly thereafter if calcitonin remains undetectable.
- 7 Systemic therapy is considered for post-thyroidectomy patients with progressive systemic disease at appropriate individualized timing (e.g. as measured by doubling time). The best option based on genomic results is selected.
- 8 The presence of pheochromocytoma is assessed in patients with hereditary/familial medullary thyroid cancer.
- 9 Patients suspected of having locoregional or metastatic MTC (i.e. calcitonin >500 pg/ml or elevated CEA) get cross-sectional imaging of the abdomen/liver in addition to the neck and chest.
- 10 For patients with rising calcitonin and undetectable disease on cross-sectional imaging, there is the possibility to receive a PET-scan with an appropriate tracer.
- 11 Genetic counseling is accessible and offered to the affected individual, who is also advised to discuss with their family.
- 12 Surgical pathology is reported using the American Joint Committee on Thyroid TNM classification, including Ki67 (MIB1 labeling index) and mitotic rate.
- 13 Pathological assessment follows the reporting guidelines of the College of American Pathologists Protocol for the Examination of Specimens from Patients with Carcinomas of the Thyroid Gland (CAP) or the guidelines from the Internal Collaboration on Cancer Reporting (ICCR).
- 14 For patients with rising calcitonin and undetectable disease on cross-sectional imaging, there is the possibility to receive a PET-scan with an appropriate tracer.
- 15 Access to palliative therapy for MTC patients is available when needed, with the necessary expertise and logistics (care pathways) in place.

Figure 1. Flow Chart of Quality Indicator Selection

