Clinical and biochemical criteria for the prognosis of small medullary thyroid carcinomas

Katerina Saltiki, Gianna Rentziou, Vasiliki Vasileiou, Anastasia Athanasiadou, Eleni Anastasiou, Maria Alevizaki

Endocrine Unit, Dept Medical Therapeutics, Alexandra Hospital, Athens University School of Medicine, Athens, Greece

Introduction - Aim of the study

- The prevalence of small medullary thyroid carcinomas (sMTCs, ≤1.5 cm) has increased during recent years.
- They are frequently diagnosed as incidental findings in surgical and occasionally in autopsy specimens.
- As their clinical course varies, various prognostic risk factors for their biological behaviour have been repeatedly investigated.

We examined whether tumor size is a predictor of clinical behaviour of these tumours.

Patients - Methods

204 MTC patients underwent total thyroidectomy.

- 119 patients had sMTC (≤1.5 cm)
  - Mean age at diagnosis 41.33±17.15 yrs (range 5-78)
  - 37% men (n=44)
  - Mean time of follow-up: 6.16±5.9 yrs (range 0.9-34)
  - 47.1% familial

Patients were classified according to tumor size (cm) in:
1. group 1: 0.1-0.5 (n=25, 24.8%)
2. group 2: 0.6-0.8 (n=22, 21.8%)
3. group 3: 0.8-1.0 (n=23, 22.8%)
4. group 4: 1.1-1.5 (n=31, 30.7%)

Clinical and biochemical parameters at diagnosis and during follow-up were recorded.

Results

- The demographic characteristics are shown in Table 1.
- Familial cases did not differ from sporadic ones concerning stage at diagnosis or outcome.
- Cervical lymph node and capsular invasion were more frequent with increasing tumor size (fig 1).
- No distant metastases at diagnosis were found in the four groups (fig 1).
- Preoperative and postoperative calcitonin levels were positively associated with tumour size (p=0.001).
- The stage at diagnosis was more advanced and the outcome less favourable with increasing tumor size (p<0.004, fig 2, 3).
- Group 1 and 2 patients were more frequently cured (group 1: 88%, group 2: 86.7%, group 3: 72.7%, group 4: 51.7%, p=0.009).
- The 10-year probability of lack of progression of disease according to tumor size did not differ significantly between the 4 groups (group 1: 96%, group 2: 100%, group 3:100%, group 4: 81.5%, p≥4.61, p=0.2, Log Rank, fig 4).
- It differed marginally between patients with tumor 0.1-1.0 and 1.1-1.5cm (98.5%, 81.5%, p=0.145, p=0.042, log rank, fig 5).
- In the subgroup of microMTCs (≤1.0 cm) patients with microMTC 0.8 had less advanced stage at diagnosis compared to 0.1-0.8cm (stage I/II: 89.4% vs 66.7%, stage III: 8.5% vs 33.3%, and stage IV: 2.1% vs 0%, p=0.032, table 2).
- No differences in the outcome were found between microMTC subgroups.

Conclusions

- Within the group of small MTCs (≤1.5 cm) the probability of 10yr-disease progression slightly increases in those with tumour size >1.0 cm.
- In the subgroup of microMTCs (≤1.0 cm) the stage is less advanced in tumours ≤0.8cm, while the outcome is similar to those with tumour size 0.9-1.0cm.
- Thus tumour size may be of clinical importance for the progression of disease only in patients with MTCs >1cm.