COMMENTARY

Because molecular studies will be increasingly used in the evaluation of thyroid biopsy material, the results of this brief report are very important. In recent studies of FNAB material, the PAX8-PPARG rearrangement has been studied. It was found in 1 of 84 biopsies in one study with the pathology showing a follicular carcinoma (2), but it was not was found in any of 235 samples in another biopsy study (3). These studies were all done by RT-PCR, the method that could lead to false positives according to the current report. However, because of the rarity of the PAX8-PPARG rearrangement, only 8.2% when detected by RT-PCR, it is probably appropriate to send patients who have this molecular marker to surgery, although the data from this study suggest that false positives are lower than previously reported, even by RT-PCR. Some believe that large follicular adenomas are precursors to follicular carcinoma. The presence of the PAX8-PPARG rearrangement provides some evidence for this concept. Nevertheless, the RT-PCR may result in a fourfold increase of false positive diagnosis of follicular carcinoma when the pathologic diagnosis is follicular adenoma.

— Jerome M. Hershman, MD

METHODS AND RESULTS

Tissue samples were snap frozen at surgery. The PAX8-PPARG rearrangement was detected by two methods: fluorescence in situ hybridization (FISH, a cytogenetic method) and by reverse-transcription polymerase chain reaction (RT-PCR).

Of 192 follicular adenomas, the authors identified only two tumors that were positive for the PAX8-PPARG rearrangement. In a review of 16 reports in which the rearrangement was detected by RT-PCR, it was found in 35.9% of 245 follicular carcinomas and in 8.2% of 281 follicular adenomas. However, when the data in the literature using the cytogenetic FISH method for detection is combined with that of the authors, only 5 of 265 (1.9%) were positive for the PAX8-PPARG rearrangement.

CONCLUSIONS

The results indicate that the chromosomal t(2;3)(q13;p25) rearrangement and the resulting fusion of PAX8 and PPARγ is rare in follicular adenomas. Its prevalence is overestimated in studies using RT-PCR.

PAX8-PPARG REARRANGEMENT OCCURS IN ONLY 1.9% OF FOLLICULAR ADENOMAS AND IS LIKELY TO BE AN ONCOGENE MARKER FOR FOLLICULAR CARCINOMA

REFERENCES


We invite you to join the ATA!

Are You Intrigued by the Study of the Thyroid? You Belong in the ATA!

• ATA members are leaders in thyroidology who promote excellence and innovation in clinical care, research, education, and public policy.

• Join us as we advance our understanding of the causes and improve the clinical management of thyroid diseases in this era of rapid pace biomedical discovery.

• A close-knit, collegial group of physicians and scientists, the ATA is dedicated to the research and treatment of thyroid diseases. ATA’s rich history dates back to 1923 and its members are respected worldwide as leaders in thyroidology.

• The ATA encourages you to apply for membership. We want you to experience the wealth of knowledge and enjoy the benefits of being active in this highly specialized and regarded society. The ATA looks forward to having you as a member!