

Correlation Between Mutations in Malignant Thyroid Nodules and Aggressive Tumor Behavior



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Introduction

- Molecular testing is a diagnostic tool that is used to better understand the nature of thyroid nodules
- Objective: Determine the relationship between specific mutations and aggressive behavior of tumors as demonstrated on postoperative pathological analyses

Conclusions

- High risk mutations were associated with aggressive behaving thyroid malignancies when compared to the other groups
- Molecular testing may be a useful method to anticipate aggressive tumor types and therefore assist in the planning the need for surgery, the extent of surgery, and the timing of surgery

Methods

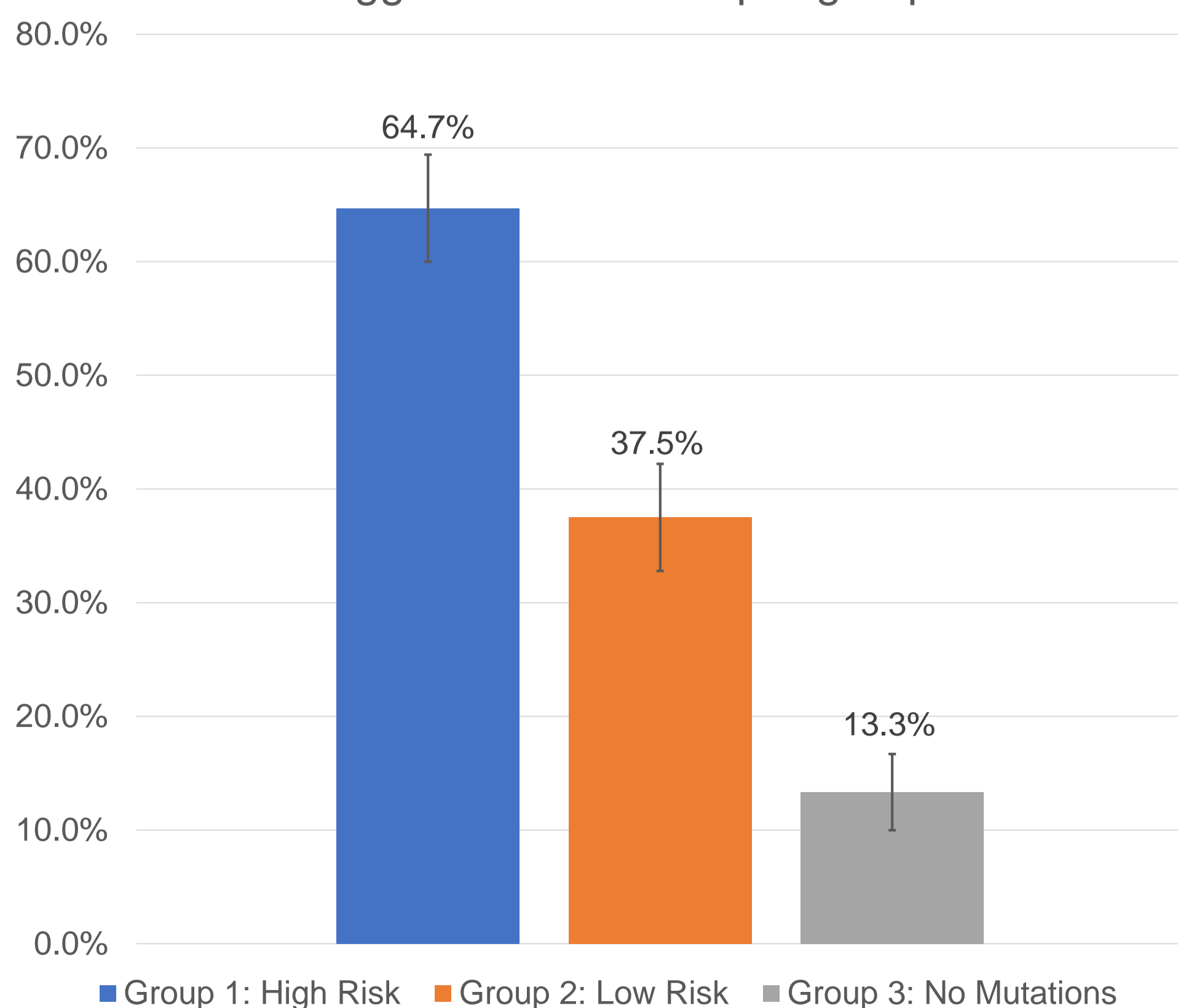
- Retrospective chart review of 103 cases
- Included patients who had undergone molecular testing using ThyGenX® and were found to have malignant tumors
- High risk mutations: BRAF V600E and TERT
- Low risk mutations: BRAF K601E, NRAS, HRAS, KRAS, RET/PTC1, PAX8-PPARγ
- Aggressive tumors: Extra-thyroidal extension (ETE), lymph node metastasis (LN+), tall cell, solid type, diffuse sclerosing or columnar variants

References

- Asarkar A, Shaha M, Shaha A, Nathan CAO, et al. Does Mutational Analysis Influence the Management of Differentiated Thyroid Cancers? *The Laryngoscope* 2017;**00**:1-2.
- Najafian A, Noureldine S, Azar F, Atallah C, Trinh G, Schneider EB, Tufano RP, Zeiger MA, et al. RAS Mutations, and RET/PTC and PAX8/PPAR-gamma Chromosomal Rearrangements Are Also Prevalent in Benign Thyroid Lesions: Implications Thereof and A Systematic Review. *Thyroid* 2017;**27**:39-48.

Results

% Aggressive cancers per group



% Aggressive features per group

