Abstract

Introduction: Thyroid nodules are the most common endocrine condition treated by surgeons. The main purpose of the evaluation of a thyroid nodule is to rule out a carcinoma. Medical decisions concerning thyroid nodules are highly influenced by subjective beliefs. Objective: To assess the subjective probabilities of malignancy that are assigned to the clinical characteristics of a patient with a thyroid nodule in order to determine the degree of influence that these probabilities have on the final clinical suspicion of malignancy compared with objective data. Material and methods: A bayesian analysis was designed to predict the risk of malignancy of a thyroid nodule based on the causal relationship between the demographic and clinical risk factors that are detected during the first consultation. A model with demographic and clinical variables using general surgeons as experts was developed. Results: The highest probability of malignancy (94%) was assigned to the pooled case of a male who was older than 60 years, with dysphonia, dysphagia, accelerated growth rate of the nodule and previous neck radiotherapy and who had a relative with thyroid cancer as well as multiple nodules that were larger than 1 cm and with hard consistency and palpable neck lymph nodes. For low risk cases in which the nodule characteristics are not suggestive of malignancy, the probability of malignancy assigned by clinicians was 33.59%; for high risk cases this was 75.54%. Conclusion: Surgeons make diagnostic decisions based on subjective beliefs that do not necessarily correspond to the objective measures of the characteristics of the nodules.

Keywords
Thyroid nodule, Bayes theorem, thyroid neoplasm, models, statistical, probability, health knowledge, attitudes, practice.