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Use of meta-analysis to evaluate tolonium chloride in oral cancer screening.

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Abstract

This study used meta-analysis, an analytical technique that uses raw data from previous researchers, to estimate the efficacy of screening for oral cancer with tolonium chloride (TCI). TCI, a vital blue dye, selectively stains acid tissue components such as DNA and RNA and has been used for more than 20 years by surgeons to identify suspected cancerous lesions. It has not been routinely used by dentists to screen either general or high-risk populations. Sensitivity and specificity, as well as positive and negative predictive values for the TCI test, were calculated. Sensitivity of TCI ranged from 97.8% to 93.5%, and specificity ranged from 92.9% to 73.3%. It was determined that if TCI is used to screen high-risk populations, the likelihood of a false negative finding is extremely low, whereas false positive results will be relatively numerous. However, given the high sensitivity of the test, the absolute number of false positive tests will be small. Further analysis is needed to evaluate the economic costs of false positives and false negatives, versus the value of identifying true positives at an early stage.

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Publication Types, MeSH Terms, Substances

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