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Refining McGee's heuristic for the estimation of the a priori risk of ovarian cancer

Aliza M. Cohen, MD; Jacques Balayla, MD, MPH, CIP, FRCSC

Objectives

The objective of this study is to **evaluate a modification of McGee's heuristic method for estimating the a priori pretest probability of disease using ovarian cancer as a case study**, while simultaneously identifying the clinical features most strongly associated with diagnosis.

Methods

A logistic regression-based adaptation of McGee's heuristic was introduced, incorporating positive likelihood ratios (LR+) of various clinical signs, symptoms, and risk factors. **We analyzed how symptom combinations, including abdominal distension, pain, bleeding, appetite changes, and history of ovarian cancer, influence pretest probability before diagnostic testing.**

Results

The modified heuristic effectively estimates minimal bounds on the pretest probability, ranging from baseline prevalence to 40%. **The highest risks were associated with abdominal distention, a palpable mass, and a family history of ovarian cancer.** The model provides clinicians with an evidence-based tool for refining diagnostic evaluation.

Conclusion

The modified McGee's heuristic bridges the gap between population-level prevalence and individualized risk assessment. Future studies should validate its clinical utility across broader settings and other diseases.