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ENDEMIC GALLBLADDER CANCER: IS THERE A ROLE FOR PROPHYLACTIC CHOLECYSTECTOMY?

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Background: Gallbladder cancer (GBC) is an often lethal malignancy with variable distribution. Incidence in the United States is low. However, in areas of Central/South America, Central Europe, Japan, and the Indian subcontinent, GBC is a major cause of cancer death. Cholecystectomy is safe and commonly performed worldwide. Thus, prophylactic cholecystectomy (PCCY) has been proposed in regions with endemic GBC. We developed a simple decision model to assist caregivers in determining the optimal strategy for managing GBC based on local incidence and technological capabilities.

Methods: Rates of disease and outcomes were derived from a review of the literature. Using TreeAge-Pro software, a decision model was created to simulate expected health outcomes for populations with high GBC incidence, following 3 treatment strategies: no early intervention, one-time screening ultrasound (US), or PCCY. Lifetime cancer-specific survival was the outcome of interest. Sensitivity analyses were performed to determine threshold values.

Results: Based on our model, populations where lifetime risk of GBC exceeds 0.4% may benefit from early intervention by US or PCCY. Two-way sensitivity analysis shows that over a relatively narrow range of disease incidence, US may be favored if sensitivity exceeds 50%. In many cases where lifetime risk exceeds 1%, PCCY may improve survival.

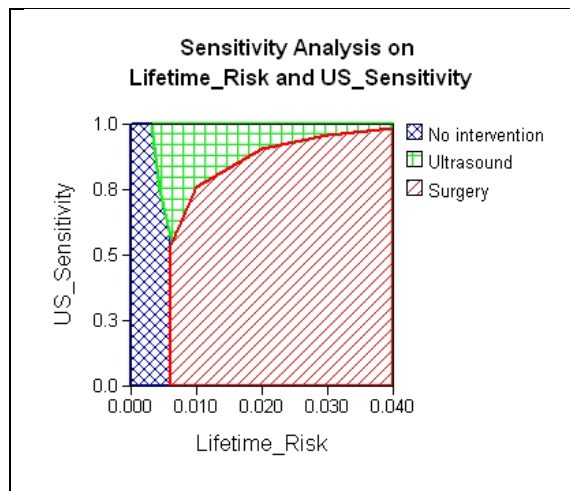


Figure: Two-way sensitivity analysis demonstrating optimal strategies with varying risk of disease and ultrasound sensitivity.

Conclusions: GBC varies in incidence, but affects many individuals in some populations in the Americas. The lethality of GBC may justify aggressive public health intervention including screening or prophylactic cholecystectomy. Decision analysis models using best-available evidence may help determine the optimal treatment of individuals at risk for GBC.