OP13 Improving Case Finding For Celiac Disease In Children And Adults: Evidence Synthesis And Economic Modeling

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Introduction: Celiac disease (CD), an autoimmune disorder triggered by gluten, impacts about one percent of the population. Only one-third receive a diagnosis, leaving the majority unaware of their condition. Untreated CD can lead to gut lining damage, resulting in malnutrition, anemia, and osteoporosis. Our primary goal was to identify at-risk groups and assess the cost-effectiveness of active case finding in primary care.
Methods: Our methodology involved systematic reviews and meta-analyses focusing on the accuracy of CD risk factors (chronic conditions and symptoms) and diagnostic tests (serological and genetic). Prediction models, based on identified risk factors, were developed for identifying individuals who would benefit from CD testing in routine primary care. Additionally, an online survey gauged individuals' preferences regarding diagnostic certainty before initiating a gluten-free diet. This information informed the development of economic models evaluating the cost-effectiveness of various active case finding strategies.
Results: Individuals with dermatitis herpetiformis, a family history of CD, migraine, anemia, type 1 diabetes, osteoporosis, or chronic liver disease showed one and a half to two times higher risk of having CD. IgA tTG, and EMA demonstrated good diagnostic accuracy. Genetic tests showed high sensitivity but low specificity. Survey results indicated substantial variation in preference for certainty from a blood test before initiating a gluten-free diet. Cost-effectiveness analyses showed that, in adults, IgA tTG at a one percent pre-test probability (equivalent to population screening) was the most cost effective. For non-population screening strategies, IgA EMA plus HLA was most cost effective. There was substantial uncertainty in economic model results.
Conclusions: While population-based screening with IgA tTG appears the most cost effective in adults, decisions for implementation should not solely rely on economic analyses. Future research should explore whether population-based CD screening aligns with UK National Screening Committee criteria and requires a long-term randomized controlled trial of screening strategies.

OP15 Cost-Effectiveness Of Quantitative Fecal Immunochemical Tests For Detecting Suspected Colorectal Cancer In The Context Of Colonoscopy Capacity Constraints

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Introduction: Approximately 42,000 new cases of colorectal cancer (CRC) are diagnosed annually in the United Kingdom with 16,800 deaths. Evidence suggests that quantitative fecal immunochemical tests (FIT) are a good predictor of CRC risk in symptomatic patients presenting to primary care. We aimed to assess the cost-effectiveness of FIT in this setting, considering capacity constraints and waiting times for subsequent colonoscopy.
Methods: We compared two diagnostic FIT strategies, at various thresholds, in the model: (i) FIT for all patients and (ii) current practice where only low-risk patients received FIT. Patients with positive FIT scores and high-risk patients in current practice received colonoscopy. Diagnostic accuracy evidence from published literature, standard UK cost sources, and other sources were used to estimate health outcomes and costs. Waiting times before colonoscopy were assumed proportional to the numbers referred, with the impact of delayed colonoscopy taken from published models. Savings per quality-adjusted life years (QALYs) lost and incremental net monetary benefit (INMB) were used. Uncertainty was evaluated.
Results: Model results suggested that, compared to current practice, FIT generated a positive INMB for the majority of thresholds assessed (GBP200 [USD254] to GBP350 [USD445] per patient at a willingness to pay of GBP20,000 [USD25,474] per QALY gained). A reduction in the number of patients sent to colonoscopy led to cost savings. However, these thresholds were associated with slight QALY losses due to a small proportion of false negative results associated with significantly delayed diagnosis, which outweighed the benefits associated with quicker times to colonoscopy for those with positive FIT results. Savings of over GBP100,000 (USD127,374) per QALY lost were generated. Conclusions were robust to the sensitivity analyses undertaken.
Conclusions: With capacity constraints explicitly represented in the economic modeling, offering FIT to all patients presenting to primary care with symptoms suggestive of CRC was cost effective when compared to current practice. However, the optimal threshold could not be robustly determined due to limited diagnostic accuracy data, parameter uncertainty, and limitations in the model structure; additional primary research could reduce uncertainty.

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