At baseline, the physical symptoms (sleep quality & disturbance) were strongly correlated with the affective (anxiety & depression) symptoms, all of which were moderately correlated with one decisional symptom (decision fatigue). One cognitive symptom (working memory dysfunction), was weakly associated with the affective and physical symptom domains, and moderately correlated with the other cognitive symptom (decision fatigue) These associative trends were maintained within and between each time point. DISCUSSION/SIGNIFICANCE: This study identifies potential opportunities for examining the various symptom domains of Family Intensive Care Unit Syndrome. The associations between the domains are consistent with the extant literature, and highlights the need for supportive interventions that mitigate affective and physical symptoms that can compromise decision-making.

Evaluation

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Cost and Benefit Tradeoffs of Preconception Fibroid Treatment with Myomectomy on Obstetric Outcomes: A Cost-Effectiveness Analysis

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OBJECTIVES/GOALS: Fibroids during pregnancy are associated with worse obstetric outcomes. However, theres no recommendation to guide counseling. We aimed to assess the cost-effectiveness of (1) treating prevalent fibroids before pregnancy and (2) screening and treatment of fibroids against the outcomes of postpartum hemorrhage (PPH) and fetal malpresentation. METHODS/STUDY POPULATION: A decision tree model was used to compare (1) preconception myomectomy for prevalent fibroids, without treatment and (2) preconception myomectomy for prevalent cases and universal ultrasound screening with subsequent myomectomy for incident cases. Probabilities and costs, calculated from the U.S. healthcare sectors perspective, were derived from the literature. Effectiveness was measured in incident PPH or malpresentation cases per 1,000 in the population. The incremental cost-effectiveness ratio (ICER) was measured in incremental cost per case averted. One-way and probabilistic sensitivity analyses were conducted to identify influential parameters and assess the impact of parameter uncertainty. RESULTS/ANTICIPATED RESULTS: Treating known fibroids prior to pregnancy averted 65.7 PPH cases at the cost of $8,773,094 and 91.08 malpresentations at the cost of $8,163,315 (ICERs, $133,532 vs $89,628 per case averted, respectively). Universal fibroid screening with treatment of incident and prevalent cases averted 7.34 PPH cases at the cost of $3,725,619 and 2.7 malpresentations at the cost of $3,477,033 (ICERs, US$507,450 vs US$1,335,771 per case averted, respectively). Sensitivity analyses showed cost-effectiveness improved with decreased cost of myomectomy and increased proportion of prevalent and incident cases. DISCUSSION/SIGNIFICANCE: Treatment alone costs $133,532 per PPH averted and $89,628 per malpresentation averted. Likewise, screening with treatment costs $507,450 per PPH averted and $1,335,771 per malpresentation averted. Additionally, ICERs may decrease when focusing on populations where fibroid incidence and prevalence is higher, for example, among Black women.

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Bilirubin Oxidative Products as Predictive Biomarkers of Cerebral Vasospasm: A Pilot Study

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OBJECTIVES/GOALS: Our aim is to understand the role bilirubin oxidation products play in the development of cerebral vasospasm in patients with subarachnoid hemorrhage. We aim to evaluate the time course of bilirubin, HO-1, and SOD1 in relation to the subsequent development of vasospasm in to establish predictors of vasospasm development. METHODS/STUDY POPULATION: Prospective cohort observational study involving collection of CSF samples of pts admitted to KU NeuroICU with SAH and placement of EVD. CSF will be extracted from the EVD of patients on the day of placement of the EVD, and then each subsequent day for a total of 10 days. Bilirubin concentration will be determined by means of spectrophotometry. HO-1 will be measured using a commercially available ELISA kit. Cu/Zn-Superoxide Dismutase will be measured using a commercially available ELISA kit. A review of patients chart will then be performed following discharge from hospital to determine if a diagnosis of vasospasm was made, details of the vasospasm (i.e. symptoms, severity), as well as to obtain demographic data and events occurring during patients admission that could confound statistical analysis. RESULTS/ANTICIPATED RESULTS: First: we will investigate the feasibility of collecting serial CSF samples and processing them for target analyte quantification. We predict that the protocol will yield quality data that will result in insight on the pathophysiology of cerebral vasospasm. Second: we will characterize the changes in target CSF bilirubin breakdown analytes over 10 days. From this we hypothesize that as bilirubin oxidation increases, the propensity for cerebral vasospasm will also increase. DISCUSSION/SIGNIFICANCE: If there is a clear correlation between formation of bilirubin and increase in HO-1, and SOD1, with the clinical signs of vasospasm, this could be used as a biomarker for not only identifying patients at risk for developing these complications but also a means to follow the effectiveness of potential therapies.

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