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IRB Proposal
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Concordance rate of treatment determination in aged patients with pancreatic cancer utilizing Comprehensive Geriatric Assessment

Study Purpose and Rationale

Last July, the International Society of Geriatric Oncology circulated the recommendation to implement a two-step approach to the pretreatment assessment of geriatric patients. [1] A brief screening exam for common manifestations of frailty is administered during the initial clinic visit. Subsequent referral for the Comprehensive Geriatric Assessment (CGA) is suggested for positive screening tests. Our body of knowledge lacks a prospective analysis reviewing the value of the CGA in affecting treatment plan determination in geriatric patients newly diagnosed with pancreatic cancer. Experts predict a demographics shift by 2050 with persons over the age of 65 comprising 1/5 of the population. Coincidentally, pancreatic cancer disproportionally afflicts older adults. From 2005-2009, data from the National Cancer Institution's evaluation of the Surveillance Epidemiology and End Results (SEER) database reveals 66.9% of patients are diagnosed over the age of 65. [2]

Although the aged population suffers disproportionately from pancreatic cancer, treatment disparities emerge upon analysis of studies. [3,4,5,6] A retrospective analysis of over 45,000 patients in the SEER database demonstrate an 8% decreased in referral to surgery evaluation with each increase in year of life. Control for comorbidities, nodal status, race, social economic status, region did not change statistical significance. [4,5] Treatment bias in the elderly is largely due to fear of aggressive management in a population typically afflicted with high morbidity and mortality. In a single institution review, Memorial Sloan Kettering's 5-year post-pancreaticoduodenectomy survival rate for patients over 70 years was 20%. Those younger than 70 years old fare significantly better at a rate of 29% ($p<0.05$). [5] Without treatment, five-year survival rate regardless of age is 6%. [4] In comparing decades of life in patients over 65, octogenarians suffer from higher perioperative mortality than in the 65-69 year age group (15.5% vs. 6.7%; $p< 0.0001$). Post-treatment course in the elderly patient is significantly more complicated by delayed gastric emptying (12% vs. 0%; $p= 0.04$), pneumonia (10% in those > 90 years old vs. 1.1% < 80 years old; $p<0.05$), discharge rate to a skilled nursing facility (24.9% > 80 year olds vs. 6.7 % in 65-69 year olds; $p <0.0001$) and chemotherapy toxicity. Complications not found to be significant include: length of stay, cardiac complications and reoperation rate. [5, 7, 8,9]

Research over the past decade points to specific characteristics predict risk for developing aforementioned complications. Depression and dependency in activities of daily living independently predict progression free survival. [8,9]

Long-term benefit from a successful pancreaticoduodenectomy procedure can be obtained in all age groups. Hazard ratios derived from SEER database analysis demonstrates after successful pancreatic resection patients enjoy increased survival. For patients aged 66-79,the hazard ratio of undergoing pancreaticoduodenectomy was 0.43 (95% Confidence Interval 0.36-0.52). A hazard ratio of 0.47 is seen in ages 70-79 (95% CI 0.41-0.53). Most encouraging is a hazard ratio of 0.36 (95% CI 0.28-0.45) in ages over 80). [5] The growing body of evidence shows careful selection of elderly patients is paramount.

Comprehensive Geriatric Assessment identifies frail elderly. It includes: a multidimensional data search including laboratory assessment of hemoglobin and creatinine clearance; analysis of patient characteristics utilizing standardized geriatric exams including the Montreal Cognitive assessment and Geriatric depression screen; and lastly an evaluation by a social worker. Although seen as the gold standard of geriatric assessment, the process requires at least 1 hour to administer. An evaluation of the Mini Geriatric Assessment (MGA) in a pilot study of patients with digestive cancers as a screening measure to analyze concordance with CGA revealed its usefulness. Rates of agreement varied between 66 and 86%. [10]

Study Design and Statistical Analysis

This study is a single-center crossover trial. All patients will receive three interventions regardless of data obtained from each. First, a Gastroenterologist will evaluate each newly diagnosed pancreatic cancer patient over the age of 65 years without utilizing a geriatric assessment. After one week, another Gastroenterologist will then reevaluate the patient and administer the Mini Geriatric Assessment. The administration of the MGA will require 10 minutes within the scheduled patient encounter. Lastly, a Geriatrician and Social Worker will evaluate utilizing the Comprehensive Geriatric Assessment. Each clinic visit will produce an assessment and oncologic treatment plan. Each patient's oncologic treatment plan will be designated to either two categories: "standard treatment" and "no treatment." To complete CGA, the Geriatrician will need approximately 45 minutes to one hour. Participating physicians will be enrolled in this study on a volunteer basis. All Gastroenterologists will attend one 30-minute lecture during Grand Rounds describing: how to conduct the Mini Geriatric Assessment and how to tailor treatment plans based on scoring. The regimen offered by the gastroenterologists will be compared against the CGA gold standard for accuracy. Also concordance rate will be compared between the MGA and CGA exams.

We will then utilize Chi square analysis to ascertain probability distribution between the concordance treatment plans derived from “no geriatric assessment” encounter against MGA and CGA individually. The agreement of CGA and MGA will be analyzed in the same manner. Primary outcome measured will be the categorical variable of agreement.

On a review of literature, multiple studies confirm CGA as a reliable examination for identifying vulnerable adults and modifying treatment plans accordingly. A 2007 European Journal of Cancer literature review noted in breast cancer information delivered from CGA’s detection of previously unknown information directly influenced treatment in 5 of 15 enrolled patients.[8] These interventions led to a subsequent improvement in quality of life. If we then assume, 33.3% of patients in the proposed study will initially receive a treatment plan to be changed by geriatric assessment. It is critical to review associated costs pertaining to these exams prior to accepting an acceptable rate of change. Essentially, the central cost in this study is time to administer. A trivial cost is associated with MGA, as it requires minimal time within a clinic visit. CGA’s cost is not only related to time of the Geriatrician, but also additional time for interview by a Social Worker is mandatory. Cost benefits far outweigh time investments in studies evaluating quality of life, pain, survival and ADL functioning 6 months post hospitalization.[8]

A chi-square test will be used with 0.8 power and $\propto$<0.05. With this knowledge a minimum of 5% effect size will need to be observed. A 5% increase in detection of variables shown to cause poor outcomes with subsequent change in treatment plan designation to “no treatment” should be seen to observe a cost-benefit improvement. Proposed number of patients is 18.

We hypothesize that greater than 5 % degree of discordance will be found between treatment plans derived from the initial evaluation and the geriatric assessment sessions.

Study Procedure

Procedure as outlined above. No invasive procedures will be performed. Patients will not be exposed to situations inducing pain, discomfort or inconvenience. Physicians and patients will be made aware of time obligation prior to beginning of the study. Excluding the additional time to administer the geriatric assessment, each clinical encounter will adhere to standard clinical care. Follow up clinic appointments beyond the CGA session to be scheduled at the physician’s discretion. In order to obtain 18 patients meeting criteria, our proposed study will continue for 1 year.

Study Drugs

No new drugs to be introduced. All treatment plans initiated at the physician's discretion.

Medical Device

None.

Study Questionnaires

None.

Study Subjects

Study will directly observing physicians, but indirect subjects are geriatric patients newly diagnosed with pancreatic cancer.

Inclusion criteria: Gastroenterology attendings and fellows with outpatient clinic practice at Columbia University Medical Center. Geriatric attendings and fellows with outpatient clinic practice at Columbia University Medical Center. Patients must be over 65 years old and diagnosed with locoregional pancreatic adenocarcinoma within the past 3 months.

Exclusion criteria: Gastroenterologists maintaining a practice devoid of patients with pancreatic cancer. Excluding patients: younger than 65 years old, unable to attend three outpatient clinic visits, in urgent need of surgical resection or palliative chemotherapy, diagnosed with cystic pancreatic lesions or diagnosed with metastatic disease.

Recruitment of Subjects

Subjects to be recruited by flyers and email. Response to recruitment will imply consent, which is explicitly conveyed in email and on flyer.

Confidentiality of Study Data

All information will be coded and de-indentified. Database will be locked with accessibility only available to investigators.

Potential Conflict of Interest

None

Location of the Study

Columbia University Medical Center

Potential Risks

Crossover studies bear the unique advantage of each patient receiving the gold standard intervention. At this time, no potential risks identified. If a patient requires emergent treatment, this will preclude their need for further study.

Alternative Therapies

None

Compensation to Subjects

The clinic visits for administration of MGA and CGA will be provided free of charge to patient.

Costs to Subjects

None.

Minors as Research Subjects

None

Radiation or Radioactive Subjects

None

References

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