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ORAL

Evaluation of the G8 Questionnaire as a Screening Tool for Frailty in Older Cancer Patients (pts)

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Background: Frailty is an important factor to be considered in the senior cancer patient (pt). The Comprehensive Geriatric Assessment (CGA) is considered to be the gold standard to evaluate frailty in this pt population but its routine use in clinical practice is difficult. Therefore, screening instruments are needed to identify cancer pts who can be treated according to standard guidelines or are in need for a full CGA with geriatric interventions. The G8 questionnaire is a short and simple screening tool and was compared with the CGA to distinguish fit from unfit pts.

Materials and Methods: Eligible pts were evaluated by the G8 questionnaire [score range: 0 (poor score) to 17 (good score)] and a full CGA to discriminate fit from unfit pts. The CGA evaluated function, mobility, nutrition, co-morbidity, cognition, depression and social support. Pts were considered unfit (vulnerable or frail) if there was more than 1 deficit within the CGA. Cut-off point used for the G8 questionnaire was a G8 score ≤ 14 for unfit pts. ROC analysis was used to evaluate the overall performance of the G8 questionnaire compared to the CGA.

Results: 135 cancer pts were recruited from two sites in Belgium. Median age was 77 years old (range 66–97 years). Most prevalent types of cancer were urological cancers (22%), head and neck cancers (21%), cancer of the digestive system (17%), breast cancer (16%) and lung cancer (13%). According to the CGA, 44% of patients were considered unfit. The G8 questionnaire screened 75% of the patients as unfit with a sensitivity of 92% (95% confidence interval [CI]: 82–97%), a specificity of 39% (95% CI: 28–51%), a positive predictive value of 55% (95% CI: 44–64%) and a negative predictive value of 85% (95% CI: 68–95%). 62% of the pts were correctly classified. The Area Under the ROC Curve (AUC) was 0.85 (Standard error 0.03; 95% CI: 0.78–0.90).

Conclusions: Overall the G8 questionnaire had a good ability (AUC=0.85) to discriminate fit from unfit patients in our sample compared to the CGA. For a cut-off point G8 score ≤ 14 the sensitivity was very high, but unfortunately the specificity or the probability to correctly identify fit patients was poor.

4007

ORAL

Comorbid Cardiovascular Diseases in Patients With Metastatic Colorectal Cancer

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Background: Currently, data regarding the prevalence of cardiovascular comorbidities in patients with metastatic colorectal cancer (mCRC) are limited. This study determined the rate of comorbid cardiovascular diseases in patients with mCRC, as comorbidities may impact treatment decisions, prognoses, and quality of care.

Methods: From the PHARMO Record Linkage System (RLS), including among other things, drug dispensing and hospitalization records of approximately 3.2 million residents in the Netherlands, all patients with a primary or secondary hospital discharge code for CRC and distant metastasis between 2000 and 2008 were selected and defined as patients with mCRC. The first discharge diagnosis defining metastases served as the index date. Prevalent cardiovascular comorbidities were assessed during the 12 months prior to the index date and patients were required to be registered in the PHARMO RLS during this period to be included in the study cohort. Cardiovascular comorbidities were captured using both cardiovascular drug use and hospital admission data, i.e. information on drugs dispensed for the treatment of cardiovascular diseases in the outpatient setting and primary and secondary hospital discharge diagnoses in the hospital admission database.

Results: A total of 2,964 patients with mCRC were included in the analysis. Mean (\pm standard deviation) age at diagnosis was 68 (± 12) years and 53% were male. Overall, cardiovascular comorbidities were observed in 52% of the patients. Of all patients identified by drug use (n=1,479), the most commonly used agents were antithrombotic agents (54%), followed by beta blocking agents (46%), and agents acting on the renin-angiotensin system (45%). Of the patients who were hospitalized for cardiovascular comorbidities during the year prior to index date (n=297), about one-third was hospitalized for cardiac dysrhythmia (39%), followed by congestive heart failure (19%) and hypertension (18%).

Conclusions: Cardiovascular comorbidities are commonly seen in patients with mCRC, which might be explained by the high mean age at diagnosis. Consideration of these conditions should be an integral part of the treatment strategy in individual patients with mCRC.

**Poster Presentations (Mon, 26 Sep, 14:00–16:30)
Cancer in the Older Patient**

4008

POSTER

Characteristics of Gastrointestinal Cancer Patients Older Than 65 Years of Age: Single Cancer Center Experience

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Background: Aging is one of the important risk factor for increased incidence of cancer. Molecular changes and insufficient immunity associated with aging results in increased susceptibility for many carcinogens to tissues especially to gastrointestinal system (GIS). Pharmacological and pharmacodynamical changes of chemotherapies associated with aging together with co-morbidities mostly seen in this older age group makes the treatment of GIS cancers unique. In the presenting retrospective study basic characteristics and differences of treatment of the GIS cancers in older age group were evaluated.

Materials and Methods: Between february 2009 and July 2010, three hundred and thirty six patients who were histopathologically diagnosed with GIS cancer evaluated retrospectively. One hundred and eighty six patients older than 65 years of age were of our main interest.

Results: Median age of our elderly patient group was 73 years (Range: 65–86). Eighty (43%) patients were women and 106 (57%) were men. Localisations of the GIS cancers were colo-rectal, gastric, pancreaticobiliary system and primary liver as an incidences of 78 (41.9%), 52 (28.3%), 37 (19.9%) and 9 (4.8%) respectively. In this older age group gastric and pancreaticobiliary system and hepatocellular cancers were the common cancer types in men than in women [36 (33.9%), 21 (19.8%) and 7 (6.6%) respectively]. In contrast colo-rectal cancer was the most common cancer type in women in elderly. The stage of GIS cancers in this age group were mostly advanced stage [stage IV, III, II and I were 84 (45.2%), 41 (22%), 49 (26.3%), and 12 (6.5%) respectively]. In older patient groups 73 (39.2%) of patients were not received any chemotherapy. Reasons were refusing to chemotherapy, low performance status, no indication to chemotherapy in 63 (86.3%), 4 (5.4%), 6 (8.2%) of patients respectively. Although 113 (60.8%) of patients received chemotherapy, 40 (35.3%) of patients were received inferior chemotherapy regimens rather than standart protocols.

Conclusion: Cancers of GIS are mostly diagnosed in advanced stage in older age patients since fatigue, debility and anorexia are common symptoms in both GIS cancers and senility. Thus screening programs and close monitoring of the symptomatic patients are important. There is a higher tendency to less treat and to deny chemotherapy in elderly. But treatment of GIS cancers gives as good results as in young adults even in elderly, if there was no associated co-morbidities. Physiological conditions and co-morbidities are more reliable factors to decide treatment strategies rather than chronological age. Assessment of good performance status by some tests like treadmill may be helpful before planning chemotherapy in this age group. Elderly patients who are in a good performance status should be encouraged for receiving chemotherapy.

4009

POSTER

Less Adjuvant Chemotherapy for Elderly Patients With Stage III Colon Cancer in the Netherlands

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Background: We described to what extent patients with colon cancer aged ≥ 75 years were treated with adjuvant chemotherapy and the impact on survival in the Netherlands 1997–2009.

Methods: All 8051 patients with invasive colon cancer stage III aged ≥ 75 years diagnosed in 1997–2009 in the Netherlands were included. Data were extracted from the Netherlands Cancer Registry. Trends in adjuvant chemotherapy administration over time were analysed and multivariable overall survival analyses were performed.

Results: The proportion of stage III colon cancer patients aged ≥ 75 years who received adjuvant chemotherapy increased from 12% in 1997–2000 to 23% in 2007–2009 ($p_{\text{trend}} < 0.0001$), with large differences between age groups: in patients 75–79 years adjuvant chemotherapy administration doubled from 22% to 44%, in those aged 80–84 years it increased from 4% to 10%, while patients aged ≥ 85 years hardly received any adjuvant chemotherapy. Furthermore, there was large variation between geographic regions. Three-year overall survival increased over time from 40% in 1997–2000 to 52% in 2007–2009 ($p < 0.0001$). Receiving adjuvant chemotherapy was the strongest positive predictor of survival in this retrospective study (hazard ratio = 0.46 (95% confidence interval: 0.42–0.51)), while older age negatively influenced survival as well as male gender and tumour characteristics. Geographic region was not correlated with survival.

Conclusion: There is an increase in adjuvant chemotherapy administration in elderly patients with stage III colon cancer in the Netherlands since 1997, with a strong age gradient and large geographic variation. Subsequently, survival in elderly patients with stage III colon cancer increased over time, most likely due to stage migration caused by better diagnosis over time. Furthermore, there is a large effect of adjuvant chemotherapy on survival, which might be caused by selection of the fitter patients, which is further investigated.

4010

POSTER

Does Age Count in Pancreatic Resection?

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Background: Surgery offers the only potential for cure in localized pancreatic cancer. The majority of patients (pts) are >65 years at presentation. Due to compromised physiological reserve, increasing comorbidities and the natural history of pancreatic cancer, elderly pts are often denied the option of surgical resection. We assessed our institution's experience of pancreatic resection for pts aged ≥ 70 years.

Methods: A prospectively maintained institutional database was retrospectively reviewed for all pts undergoing pancreatic resection from 2006 to 2011. Demographics, laboratory, treatment and outcomes data were obtained.

Results: Of 69 pts who had surgery for pancreatic neoplasm, 19 (28%) pts were ≥ 70 years. Sites of disease in these pts included pancreas head ($n = 11$, 58%), peri-ampullary ($n = 5$, 26%), and distal cholangiocarcinoma ($n = 3$, 16%). Surgical procedures included pancreaticoduodenectomy ($n = 16$, 84%) and double biliary bypass ($n = 3$, 16%) [due to occult metastases at surgery]. Pathologies included adenocarcinoma (AC) ($n = 16$, 84%) and NET (neuroendocrine tumour)/IPMN (intraductal papillary mucinous neoplasms) ($n = 3$, 16%). Number of R0 resections was 15 (15/16, 94%), with positive lymph nodes in the majority of cases. Pre-operative comorbidities included: COPD ($n = 3$, 16%), and vascular disease ($n = 10$, 53%). Median baseline ECOG was 1 (range, 0–2). There was no perioperative mortality. Median length of hospital stay was 13 days (range, 9–50). The majority of pts were referred to medical oncology with complete recovery of baseline ECOG. Thirteen pts who underwent pancreatico-duodenectomy for AC (81%) received adjuvant chemotherapy (with expected toxicities) and the remaining 3 pts required no treatment. Ten pts, after pancreatico-duodenectomy and adjuvant therapy had at least 2 yrs follow-up with median overall survival of 21.5 months (range, 12–44). Indeed, in those pts aged 70–75 yrs median overall survival was 18.6 months while in the pt subset aged 75–80 yrs median overall survival was 25.75 mths. A further three pts aged ≥ 80 yrs underwent pancreaticoduodenectomy followed by adjuvant chemotherapy in the past 12 mths, with no peri-operative complications or significant acute chemotherapy-related toxicities. They remain on active follow-up, with maintenance of baseline performance status to date. Data is currently awaited from another institution in Ireland specialising in pancreatic resections to further validate these findings.

Conclusions: Therapeutic nihilism exists in the treatment of pancreas cancer in elderly pts. This group can undergo pancreatic resection with acceptable post-operative morbidity, mortality and overall outcome as is evidenced in our institution's experience.

Age alone should not be a discriminatory factor. Standard pre-operative assessment and geriatric scoring systems combined with more intensive post-operative rehabilitation is affording the older patient the opportunity to avail of optimal oncologic treatment.

4011

POSTER

Concurrent Chemoradiation in Locally Advanced, Unresectable Non Small-cell Lung Cancer (LA-NSCLC): Comparison of Efficacy and Treatment Tolerance in the Elderly

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Background: Concurrent chemoradiation (CCRT) is considered the standard of care for LA-NSCLC but is associated with significant local and systemic toxic effects. To test the hypothesis that elderly patients are more subject to toxicity, we compared treatment-related toxicity, impact of treatment on quality of life and differences in outcome between younger (<70 years) and older (≥ 70 years) patients.

Materials and Methods: Fifty-nine consecutive patients (<70 years = 42, ≥ 70 years = 17) were prospectively enrolled in a phase I/II radiation dose escalation trial with fixed dose weekly chemotherapy consisting of cisplatin and docetaxel at 20 mg/m² each. The trial was approved by the competent authorities and institutional ethics committee and was registered (NCT00379717, EUDRACT2006–003708–21). A median total dose of 67.2 Gy (range, 60–74.4 Gy) was administered in all patients besides one patient due to early progressive disease. Dose intensity of concurrent cisplatin and docetaxel was 96% each. Dose reductions and/or omission of weekly chemotherapy occurred in 8 patients (<70 years = 3, ≥ 70 years = 5, $p = 0.152$). Acute and late toxicities were scored using RTOG/EORTC toxicity scoring systems. Quality of life was assessed using the QLQ C-30 questionnaire. Incidences of toxicities and mean scores for global health status were compared using Student t-test and paired-samples t-test. Overall survival was calculated using Kaplan–Meier method with log-rank testing for intergroup comparison.

Results: The rate of acute \geq grade 3 esophagitis and pneumonitis was 15% and 3% respectively. The rate of late \geq grade 3 esophagitis was 26% and pneumonitis was 2%. No significant differences in esophageal or lung toxicity were observed between both age groups. The rate of \geq grade 3 neutropenia was 23.5% in the older population, significantly higher than the 2% incidence in the younger population ($p = 0.0099$). Mean values for global health status decreased at last day of treatment compared with baseline for both groups. However, decrease in global health status was significant in younger population only (62.5 ± 23.5 at baseline vs 52.6 ± 18.6 at last day of CCRT, $p = 0.0403$). Median survival time for elderly patients was not significantly different (416 days vs 450 days, $p = 0.425$).

Conclusions: Besides increased rate of neutropenia, elderly patients did not experience increased toxicity or decreased quality of life after CCRT, compared to younger patients. A comparable survival can be achieved in the elderly patient.

4012

POSTER

Stereotactic Radiosurgery of Brain Metastases in Elderly Patients: the Cleveland Clinic Experience

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Background: Elderly patients often suffer from cerebrovascular impairment. Whole brain radiotherapy (WBRT) can cause vascular damage and enhances the risk of dementia. For patients with a limited number of brain metastases (BM) stereotactic radiosurgery (SRS) is promising alternative. This study was designed to evaluate the therapeutic effect of SRS in patients aged ≥ 70 years who presented with BM.

Methods: The IRB-approved Cleveland Clinic Brain Tumour and Neuro-Oncology Center's database was used to identify patients with BM who were ≥ 70 years at the time of diagnosis of BM and were treated with SRS between 8/2000 and 12/2009. Multivariable analysis was conducted to identify independent predictors of survival using a Cox proportional hazards model and a stepwise selection algorithm with $p = 0.10$ and $p = 0.05$ as criteria for entry and retention.

Results: 173 BM patients with a median age of 75 years (range 70–87, 64% male) were included. Most patients had either lung cancer (55%, 95/173) or kidney cancer (16%, 28/173) primaries and the median time between diagnosis of the primary cancer and diagnosis of BM was 10.3 months (0–309.6 months). Forty-six percent (79/173) of patients had multiple BM and 57% (99/173) had extra-cranial metastases at the time BM was diagnosed. Median overall survival (OS) was 5.5 months from the time of SRS (95% CI, 4.4–7.2 months). Cause of death was extracranial tumour progression in 35% of the patients, cerebral tumour progression in