Of these, 231 patients showed normal leukocyte values at start of CT (118 PP and 113 SP/TX patients). Median treatment duration was 4 days and was comparable across all three CT cycles. PP was associated with longer administration of filgrastim compared with SP/TX (5 vs 3 days). Increased duration of filgrastim administration was also seen in patients with co-morbidities (5 vs 4 days in patients without concomitant disease). In patients receiving filgrastim for PP, leukopenia was prevented over three cycles of CT in 48%, while 24% and 10% had leukopenia CTC grade 3 and 4, respectively. In comparison, severe leukopenia was observed in 54% (CTC grade 3) and 12% (CTC grade 4) of the patients receiving filgrastim as SP/TX; prevention of leukopenia was possible in only 14% of SP/TX patients. Nine percent of PP patients and 14% of SP/TX patients experienced neutropenic complications and/or febrile neutropenia. CT was discontinued during the first CT cycle in 3% of PP and 9% of SP/TX patients. According to the assessment of the attending physician, 96% of patients benefited from receiving filgrastim.
Conclusions: PP with biosimilar filgrastim was more effective at preventing CIN than SP or TX. Early prophylactic use of filgrastim therapy in the course of treatment is beneficial to patients. Cost savings associated with biosimilar filgrastim may improve patient access to therapy and encourage a move towards increased primary prophylactic use.

4026 POSTER

Rate of Hemoglobin (Hb) Decline by Age and Tumour Type in Patients (pts) Receiving Chemotherapy (CT) Without an Erythropoiesis-stimulating Agent (ESA) in the United States Community Setting

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Background: CT often induces anemia that can be treated with transfusions or ESAs (the ESA labels state to initiate ESAs in CT pts at Hb ⩽10 g/dL [EU] or <10 g/dL [US]); since low Hb of <9 g/dL may increase transfusions, understanding how quickly Hb declines from <10 to <9 g/dL in CT pts may help optimize ESA use.
Material and Methods: This retrospective observational assessment used clinic-based EMR data to estimate the proportion of CT episodes in which Hb declined from <10 to <9 g/dL by 3, 6, and 9 weeks (wks). Episodes with taxane, platinum, anthracycline, or gemcitabine doublets were identified at the time of 10 ⩽ Hb < 11 g/dL and when Hb further declined to <10 g/dL at least once in 9 wks. Episodes were re-indexed at Hb <10 g/dL to estimate the proportion that further declined to Hb <9 g/dL by 3, 6, and 9 wks without ESAs. Data were stratified by tumour type and age (<65 vs ⩾65 years [yrs]).
Results: 10942 CT episodes (between 8/1/08 and 6/24/10) with 10 ⩽ Hb < 11 g/dL were identified in 10523 pts from 63 US community oncology practices. Episodes evaluated included 72% women; 39% of the sample was ⩾65 yrs. 5535 episodes (51%) declined from baseline 10 ⩽ Hb < 11 g/dL to Hb <10 g/dL by 9 wks. Estimates of the proportion of these episodes that declined from Hb <10 to <9 g/dL for each tumour type by age category are shown (Table). Compared with pts <65 yrs, a statistically significantly higher proportion of episodes for pts ⩾65 yrs declined to Hb <9 g/dL within 3 wks (38% vs 34%; p = 0.0026) and 9 wks (49% vs 43%; p = <0.0001). A similar result was seen in breast cancer pts (<65 vs ⩾65 yrs) at 3 wks (p = 0.05) and 9 wks (p = 0.02).

Table: Proportion of CT episodes with Hb decline from <10 to <9 g/dL analyzed by tumour type and age categories (yrs).

	3 wks	6 wks	9 wks
Total episodes (n = 5535)	35%	43%	46%
⩾65 (n = 2222)	38%	46%	49%
<65 (n = 3313)	34%	40%	43%
Breast (n = 2110)	28%	35%	38%
⩾65 (n = 473)	31%	40%	42%
<65 (n = 1637)	27%	33%	36%
Lung (n = 1804)	42%	48%	51%
⩾65 (n = 1023)	41%	47%	51%
<65 (n = 781)	43%	50%	53%
Ovarian (n = 453)	36%	43%	48%
⩾65 (n = 199)	40%	48%	51%
<65 (n = 254)	32%	40%	46%
Other (n = 1168)	40%	47%	50%

Conclusions: Results suggest that pts with various tumour types receiving CT without ESAs transition quickly from Hb <10 to <9 g/dL. The proportion of CT episodes declining to <9 g/dL was higher in pts ⩾65 yrs than in younger pts. As elderly pts are less likely to tolerate low Hb due to co-morbidities, awareness of the higher risk of Hb decline in these pts is important for anemia care.

4027 POSTER

Age-related Changes in Plasma Levels of Inflamatory and Angiogenic Cytokines in Patients With Cancer

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Background: The majority of cancer incidence and mortality occurs in individuals aged older than 65 years, and the number of older adults with cancer is projected to significantly increase. As such, understanding the changes accompanying age in the context of the cancer patient is of critical importance. Age-related changes can impact tolerance of anticancer therapy and can shift the overall risk-benefit ratio of such treatment. It is increasingly recognized that several laboratory markers may predict morbidity and mortality in older adults; these biologic variables may further help in stratifying this group of patients based on risk. In this study we examine inflammatory and angiogenic markers in cancer patients classified according to their age in older adults.
Methods: Using ELISA test circulating Il-6, TNF alpha and VEGF were measured in the sera of 80 patients with different cancer of whom 38 (48%) were female in comparison to 40 healthy controls. Three groups of patients were studied, the first consisted of 25 patients (age 30−40 years); the second of 25 (age 40−70 years), the third group of 30 elderly patients (>70 years).
Results: Serum IL-6, TNF alpha and VEGF levels were higher in cancer patients as compared to control group. When patients were classified according to their age, a significant age-related increase of IL-6 and VEGF were observed (p = 0.009 and 0.034 respectively) but not with TNF alpha. Furthermore, high IL-6 and VEGF level were associated with further functional adverse outcomes.
Conclusions: A specific inflamatory and angiogenic status exist for elderly patients. The increased level of these markers might predispose these patients to clinical manifestations and non tolerence of the treatment. However, a study comparing these parameters only in elderly patients (>70 years) and relation to their clinical status are necessary to confirm these results.

4028 POSTER

Ability of the Comprehensive Geriatric Assessment to Predict Frailty in Elderly Patients Diagnosed With Cancer in a General Hospital

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Introduction: They have been developed different criteria for defining frailty in the elderly, but they are not unanimous, especially in the field of Oncogeriatry. Linda Fried's criteria are the most accepted in the scientific literature in general, however, the Oncogeriatry has made special emphasis on considering the Comprehensive Geriatric Assessment (CGA) as the main tool for distinguishing between frail and not frail patients.
Objectives: The aim of this study was to determine the role of CGA to predict the risk of frailty in elderly patients.
Material and Methods: It was conducted a prospective study in the Unit of Cancer in the Elderly, Section of Medical Oncology, in the General Hospital Virgen de la Luz de Cuenca. They were collected the following data: patients' age, sex, kind of tumour, tumoral stage, self-perceived health status and CGA. It was used the CGA model created by MJ Molina-Garrido et al. By a bivariate logistic regression analysis it was analyzed which of these factors are associated with risk of frailty, as measured by the Barber questionnaire.
Results: We included a total of 204 patients with a mean age of 79.2 years (range: 70.2 to 96.2 years). 57.4% (n = 117) were men. 30% had ECOG 0 (n = 61). 61.5% (n = 115) could read and write. 81.2% of the elderly (n = 134) considered that their health status was equal to or better that the health status for an individual of its own age. The most common tumours were digestive tumours (39.7%, n = 81), breast cancer or gynecological tumours (25.0%, n = 51) and urological and prostate tumours (14.7%, n = 30). 41.2% of patients (n = 80) had metastatic tumours. 74.7% (n = 148) had risk of frailty by measured by the Barber questionnaire.
In the bivariate analysis, only age (OR 1.161, 95% CI 1.034 to 1.303, p 0.011) and dependency in IADL (instrumental activities of daily live) (OR 18.149, 95% CI 2.663 to 123.713, p 0.003), were associated with a higher risk of frailty. The model had a Nagelkerke R2 value of 0.337. The

specificity of the model was 55.6% and its sensitiviy was 84.9%, with an area under the curve (AUC) of 0.799 (CI 95% from 0.709 to 0.888).
Conclusions: The risk of being frail for an elderly patient with cancer is 1.161 times higher than the risk for other patient one year younger. The risk of being frail in an elderly oncologic cancer who is dependent in IADL is 9.562 times higher than the risk in an elderly patient with independence in IADL. The proportion of the risk of frailty explained by this model is not very good (33.7%). It means that there are another factors that influence the risk of frailty among the elderly patients diagnosed with cancer. It would be essential to investigate other variables to detect and characterize the frailty in the elderly cancer. Perhaps, the CGA is not the best tool to detect frailty in this group of the population.

4029 POSTER

Geriatric Oncology and Oncology Nursing for Cancer Care in the Older Adults

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Background: The ageing of population, an important epidemiological event of the second half of the 20th century, represents one of the major influences on medical practice for immediate future. The effect of cancer in older persons is bound to be a worldwide phenomenon.
Objectives: To describe the overview for geriatric oncology and cancer incidence in older ages To explain the duties and responsibilities of oncology nurses and basics of approach in oncology nursing To highlight the location of Comprehensive Geriatric Assessment (CGA).
Cancer, which is one of leading health problems, takes place on the top among death reasons in Turkey as whole the world. Studies have indicated that risk of cancer development has more than 10 times in persons over age 65 to younger people. Carcinogenesis is a lengthy process occurring over several years. Chiefly ageing can affect tumour development; also tumour behaviours are more different in elders. Approximately 60% of cancer incidence and 70% of cancer mortality occurs in older adults.
Geriatric oncology is going to become a major component of oncology and geriatric practice. With growing population and ageing, it is required that older people are followed more closely and to provide multidisciplinary approach. CGA is defined as a multidimensional, interdisciplinary, diagnostic process aimed at determining medical, psychological and functional capabilities of elders.
Older people are frailer, and have higher prevalence of comorbidity. Care of older patient with cancer and early diagnosis are more complex than young. Elders, who survive cancer, have unmet health, and may receive less aggressive therapy. Elders use more drugs, so they enter at risk in high rate of toxicity in terms of drug-drug and drug-disease interactions.
As the incidence of cancer cases increases in society, this is an important factor on developing oncology nursing. The aim of oncology nursing is to help to prevent cancer in community, to improve quality of life of the patient diagnosed cancer. The expected roles from nurses are to educate the community about cancer, early diagnosis, cancer care, rehabilitation, consultancy and make a research. The chemotherapy and treatment side effects, hygiene, infection prevention, nutrition, pain management techniques and relaxation methods are taken place in educations given by nurses.
Discussion: Ageing cannot be considered to be directly responsible for carcinogenic process, but some mechanisms highlight the relationship between cancer and ageing. While the mechanisms of age associated neoplasia have not been determined, cancer does not appear to be inevitable consequence of ageing.
Conclusion: The incidence of cancers increases dependent on many factors in older ages. In oncology nursing, it is needed to combine with results of the research and application, determine the priorities, adopt holistic approaches. Institutional and educative policies and programs should be carried out to train clinical scientists and address the compelling problems of cancer in older patients.

4030 POSTER

Understanding the Older Person With Cancer − a Qualitative Study of Two Wards − Findings

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Background: This paper reports on the final stage of a qualitative study that seeks to compare patient and health care professionals' perspectives and experiences of cancer care for the older person. This study seeks to illuminate the experiences of both patients and health care professionals in two hospital wards (a specialist cancer ward and a general medical ward in a general hospital) selected to allow comparisons to be made in terms of the potentially different emphasis given, depending on whether the focus is on cancer treatment or care of the older person.
Material and Methods: The research design, employing focus groups, dissemination focus groups and semi-structured interviews, centres around comparison of a medical and a specialist ward in one hospital − exploring the challenges involved, depending on whether the focus is on the older person or the disease (cancer patient). It also highlights the tensions that may arise − both for patients and professional carers, as they negotiate the potentially contradictory demands of the 'social' and the 'clinical', the 'system' and the patients' life worlds.
Results: Findings were organized around the following themes: 'the ward as a half way house', 'etiquette', 'emotion work' and 'hope'. Dissemination focus group sessions served as dual purpose: to inform participants and to generate further data to establish whether these findings have relevance for them.
Importantly this allowed for the original sample to be augmented (by including new categories of staff and individuals with a remit to work across both wards, who were not involved in the first set of focus groups and interviews).
Integrating analysis of original study transcripts and data generated in dissemination sessions also allows for further interrogation of theoretical frameworks that seek to elaborate the intersection of the older person with cancer.
Conclusion: This study shows the complex and potentially conflicting perspectives of this heterogeneous group of patients and their professional carers, as they respond to the challenges raised by the conjunction of cancer and old age. The implications for health care delivery and professional training for gero-oncology will be considered.

4031 POSTER

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

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Background: There is a lack of scientific knowledge how to select the elderly cancer pt for different anticancer strategies. The Comprehensive Geriatric Assessment (CGA) is a well-established approach to evaluate frailty in older pts but is time-consuming. There is a need for validation of short and easy-to-use screening tools to identify fit cancer patients that would more likely tolerate and benefit from chemotherapy. The Groningen Frailty Indicator (GFI) is a short screening tool and was compared with the CGA as the gold standard to discriminate fit from unfit pts.
Materials and Methods: Eligible patients were screened with the GFI [score range: 0 (not frail) to 15 (very frail)] followed by a full CGA to discriminate fit from unfit pts. The CGA consisted of questionnaires evaluating function, mobility, nutrition, co-morbidity, cognition, depression and social support. Pts are considered unfit (vulnerable or frail) if there is more than 1 deficit within the CGA. Cut-off point used for the GFI was a GFI score $\geqslant 4$ for unfit pts. ROC analysis was used to evaluate the overall performance of the GFI compared to the CGA.
Results: A total of 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 pts were considered unfit. The GFI screened 44% of the pts as unfit with sensitivity 62% (95% confidence interval [CI]: 48−74%), specificity 69% (95% CI: 58−80%), positive predictive value 62% (95% CI: 49−73%) and negative predictive value 69% (95CI%: 58−79%). 64% of the pts were correctly classified. The Area Under the ROC Curve (AUC) was 0.78 (Standard error: 0.04; 95% CI: 0.70–0.85).
Conclusions: Overall the GFI had a good ability (AUC=0.78) to discriminate fit from unfit pts in our sample compared to the CGA. There was a good trade-off between sensitivity and specificity for a cut-off value of GFI score $\geqslant 4$ for unfit pts.