and dosages were verified through the electronic records and patients' pharmacies.
A total of 143 elderly patients were included in the study. The mean age of the patients was 71 years old (range: 65−85). Patients took an average of 3.96 (min: 1, max: 14) prescription medications at home. Forty-five (31.5%) patients missed to mention at least one of their prescribed medications. Most patients correctly identified the prescribed indications for use (85.8%), prescribed doses (89.7%) and dosing frequencies (88.5%). However, few patients could name their medications (24.1%) and few were aware of precautionary instructions for use (11.8%). Survey on safe medication-use practices showed majority (70%) of patients could identify the medications they are allergic to. Almost half of patients would read drug labels (52.8%), discard medication when no longer needed (51.8%) and check expiry dates (43.3%). About a third would check with prescribers for changes in new prescription (30.5%). Only few patients would keep a medication list (16.9%).
A majority of our elderly cancer patients have good understanding of their prescribed medications. However, many of them do not keep a list of medications they are taking, and do not always read drug labels or check the expiry dates. Appropriate communication between healthcare providers and patients, patient education, use of aids such as medication diary and referral for medication review, could improve medication safety in this age group.

4014 POSTER

Safety and effectiveness of rehabilitation for elderly patients with hematological malignancies who received intensive chemotherapies

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Background: Physical function is frequently impaired in elderly patients with hematologic malignancies who receive intensive chemotherapy. This increases a risk of treatment-related mortality. However, optimal management of this problem remains to be established, while rehabilitation seems to be promising. The purpose of this study is to investigate the feasibility and effectiveness of rehabilitation for these patients.
Materials and Methods: Between December 2006 and February 2009, 22 elderly patients with hematologic malignancy who received induction chemotherapy or high dose chemotherapy followed by autologous stem cell transplantation received rehabilitation program supervised by exercise specialists in our institution. Rehabilitation program included walking, aerobic exercise, resistant exercise, and stretching. We retrospectively investigated safety, and effectiveness of rehabilitation using their medical records.
Results: Median age of included patients was 67 years old (range 60−81). Underlying diseases included acute myeloid leukemia (n = 14), acute promyelocytic leukemia (n = 2), acute lymphoblastic leukemia (n = 2), multiple myeloma (n = 2), and lymphoma (n = 1). Performance statuses of all patients on admission were 0−1. All patients received rehabilitation without complications. Rehabilitation program were performed in median 59% (range 17−94%) of planned rehabilitation day. The primary causes of discontinuance of rehabilitation were febrile neutropenia (n = 6), hemorrhage (n = 2), fatigue (n = 1), hypoxemia (n = 1), compression fracture (n = 1), and loss of patients' motivation (n = 4). Four patients died of treatment-related complications or disease progressions. The remaining 18 patients discharged on foot. Barthel index on discharge were similar to those on admission in 13 of these 18 patients. The strength of quadriceps femoris muscle in the remaining five patients was impaired. Four of them had a fall during admission.
Conclusions: The present study demonstrated the feasibility of rehabilitation during intensive chemotherapy for the elderly patients with hematologic malignancies. It also showed that rehabilitation might have contribute to maintaining physical function in these patients.

4015 POSTER

Early breast cancer in elderly women undergoing multidimensional geriatric assessment (MGA): does the consultation with Adjuvant!online change the choice of postoperative therapy?

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Background: Elderly breast cancer pts should be evaluated with an MGA to estimate the tumour-independent life expectancy, the risk of adverse events of endocrine (ET)/chemotherapy (CT) and to minimize their impact on daily life. Adjuvant!online (ADJ) program was built in order to provide oncologists with estimations of risks of relapse and death from cancer compared to survival or cancer-independent death at 5 and 10 years.
Materials and Methods: Clinical and comorbidity data of women aged $\geqslant$70 years were collected within a multicenter prospective observational study on adjuvant therapy for breast cancer. Estimations of potential benefits from adjuvant treatments and probability of non-cancer related death were calculated with the ADJ program and then presented to Monfardini, Crivellari and Molino to express an independent therapeutic choice blinded from full MGA data on which the actual choice of treating physicians (TRPH) had been expressed.
Results: 202 pts had undergone complete clinico-pathological assessment and full MGA to be considered eligible for this analysis. Median age was 77 years (range 70 to 92). Percentages of those left untreated were higher in the ADJB review (22%) compared to TRPH (9.5%, test K of Coen @0). Among 172 with estrogen-receptor positive disease, ADJB review and TPRH were not statistically different in prescription of adjuvant chemotherapy in adjunct to endocrine therapy (25% vs 13.7%) (K = 0.218 p = 0.000). In patients receiving chemotherapy, 2 ADJB reviewers tended to prescribe more frequently anthracyclines compared to TRPH (88% vs 50%, p = 0.539). Yet, prevalence of cardiac comorbidities among pts proposed for anthracyclines according to ADJB review was significantly high (75%).
Conclusions: Reviewing treatment choices by means of crude relapse estimations based on ADJB (tends to treat less the group at low risk and treat more aggressively the high risk group), probably because the perception of actual long term benefit of treatments is more objective. On the other hand, since ADJ considers the total comorbidity burden but not the system involved, decisions based on ADJ program without full MGA tend to neglect the high prevalence of cardiac contraindications to anthracyclines. ADJ should never substitute for full MGA in order to prevent specific organ-toxicities of CT.

4016 POSTER

Quality of life (QoL) in elderly patients (pts) with early-stage breast cancer treated with ibandronate (I) with or without capecitabine (X): results of the GBG 32 ICE trial

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Background: Although few studies are conducted in elderly breast cancer pts, they appear to benefit from polychemotherapy. However, in this population, the impact of treatment on QoL has not yet been reliably assessed. Therefore we included QoL assessment in the ICE study, which compared I alone versus I+X in elderly pts at increased risk of relapse.
Materials and Methods: Main inclusion criteria were: female $\geqslant$65 years with histologically confirmed breast cancer that is either node-positive or high-risk node-negative (tumour size $\geqslant$2 cm, grade > I, and/or ER- and PgR-negative); no prior chemotherapy; adequate organ function; and a Charlson score $\leqslant$2. Pts received either I alone for 2 years (50 mg p.o. daily or 6 mg i.v. every 4 weeks according to pt preference) or the same dose of I for 2 years + X 1000 mg/m^2 bid on days 1−14 q21 days for 6 cycles. Pts with ER/PgR-positive disease received endocrine therapy according to local/institution guidelines. The primary objective is to compare disease-free survival (DFS) with either I alone or I+X. Secondary endpoints include

overall survival, safety and QoL. After giving informed consent, QoL was evaluated using the EORTC Q 30 breast cancer module, an established and validated questionnaire published by the European Organisation for Research and Treatment of Cancer. In addition, geriatric assessment was examined using the Charlson or the VES 13 score. The EORTC Q 30 was completed at study entry, 18 weeks and 6 months after randomization and annually from year 1 to year 5. A total of 1,394 pts (697 per arm) with 497 events are needed to show an improvement in 5-year DFS from 65% to 71.5% with X, assuming a drop-out rate of 5%. This provides 80% power to detect a clinically relevant difference between the treatment arms at $\alpha = 0.05$ (two-sided).
Results: Between 06/2004 and 08/2008 1409 pts were recruited in 172 German centers; 706 pts received I alone and 703 pts received X+I. The median age was 71 years (range 64−88). At study entry, the median Charlson Score was 0 (range 0−3) and the median VES 13 score was 1 (range 0−27). 762 pts answered the EORTC Q 30 questionnaire at baseline (388 pts in the I only arm and 374 in the I+X arm), representing 54% feedback. During the follow-up period, 596 pts answered and returned their questionnaire (300 I alone and 296 I+X).
Conclusion: This is the first study evaluating the impact of adjuvant therapy on elderly breast cancer pts. First QoL results will be presented at the meeting.

4017 POSTER

Antiangiogenetic drugs in combination with irinotecan (IRI) and capecitabine (XEL) in ACRC elderly patients: first data about safety and efficacy

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Background: Older individuals always experienced enhanced susceptibility to the side effects of cytotoxic chemotherapy. The aim of the study was to evaluate impact of bevacizumab (BEV) in combination with IRI and XEL in ACRC elderly patients.
Materials and Methods: 44 (20f-24 m) elderly patients with advanced colorectal cancer (median age: 72; range: 67−80) were enrolled. Comprehensive Geriatric Assessment (CGA) was performed to assess eligibility for chemotherapy. The dose of IRI and XEL was adjusted according to Kintzel-Dorr formula. Primary endpoint: clinical response rates (RR) according to WHO criteria. Secondary endpoints: toxicity profile using NCI-CTC v2.0 and quality of life (QoL) score measured through EORTC QLQ-C30 questionnaires. All patients were evaluated for common treatment-related adverse events with regard to haematological and liver toxicity, nausea and vomiting, stomatitis, diarrhea, hand/foot syndrome and sensory neuropathy, according to the ECOG Common Toxicity Criteria.
Results: Based on CGA, 39 Patients were included into groups I-II, according to Balducci's classification of frailty and treated with IRI (200 mg/m^2) + BEV (7.5 mg/Kg) on day 1, and XEL (fixed dose of 1000 mg b.i.d) assumed orally from day 2 to day 15, every 3 weeks for 6 months. None of the pts needed any delay in drugs delivery. Tumor response rates observed were 46% (CR+PR). Clinical benefit, including Stable disease, was 79%. No grade-4 toxicity was experienced. QoL score improvement was noted in all pts after treatment.
Conclusions: In elderly colorectal cancer patients the dose reduction of XEL through fixed daily dose administration of 1000 mg b.i.d. allows to reach a good tolerability profile with a significant reduction of all grades toxicity compared to dosage calculated according to patients' body surface. We have employed a fixed dose of XEL to obviate the inherent difficulties in dosing with different tablet sizes and to improve compliance with oral chemotherapy assumption in patients with a worse IADL profile. This regimen seems to be active and safe and authors believe that dose reduction improves tolerability without a decrease in efficacy. DFS and OS is under evaluation.

4018 POSTER

LINAC stereotactic radiotherapy of brain metastasis in elderly patients

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Background: Elderly patients very often suffer from cerebro-vascular impairment. It is known, that vascular damage enhances the risk for side effects such as dementia after whole brain radiotherapy. For patients with a limited number of brain metastases stereotactic radiosurgery is an ideal alternative. In this retrospective analysis survival and palliative effect of stereotactic radiotherapy of brain metastasis in patients 70 years and older was analysed.
Methods: From 350 patients treated in our clinic from January 2003 to December 2008 by stereotactic radiotherapy of brain metastases all patients 70 years and older were analysed.
Results: 63 patients were 70 years and older (median 74 years, range 70−87 years). 52% of the patients were male, 48% were female. The most frequent primary tumors were NSCLC (41%), colorectal cancer (18%), kidney cancer (14%) and breast cancer (10%). In 53 patients (84%) radiosurgery was performed, 10 patients (14%) received stereotactic fractionated radiotherapy. Median survival of all patients was 6 months. 1 year survival was 23%. Cause of death was extracranial tumor progression in 55% of the patients, only 7% died because of cerebral tumor progression, in 38% cause of death is unknown. 42 patients (67%) showed symptoms at time of radiotherapy. Within the first 6 months after stereotactic radiotherapy symptoms were reduced in 38.5% of the patients and aggravated in 23%. In 21 patients (57%) longer follow up showed durable improvement.
Conclusion: Stereotactic radiotherapy is a gentle treatment for brain metastasis even for elderly patients. Short median survival after treatment is mainly due to extracranial disease progression. Symptom reduction is possible in more than 50% of the patients.

Paediatric oncology

SIOPE Society session

(Mon, 21 Sep, 11:00−13:00)

4100 ORAL

Genetic characterization of a new subgroup of childhood precursor B-ALL with a very poor prognosis

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Background: Relapse risk stratification based on cytogenetic abnormality is becoming more important in pediatric acute lymphoblastic leukemia and gives the clinician the opportunity to adjust the intensity of therapy. To predict the cytogenetic abnormality we have selected a set of 110 probes, with a high accuracy. Interestingly, a group of formerly B-other patients clustered together with the BCR-ABL positive patients, but lacking the BCR-ABL translocation. This new defined group represents 15−20% of the B-cell leukemia and has an unfavourable prognosis equally to the BCR-ABL positive patients; therefore we describe this group as BCR-ABL like. In this study we investigate the genetic background of this new defined group.
Material and Methods: We have selected 44 BCR-ABL like patients, 15 BCR-ABL positive patients and 25 B-ALL patients with other cytogenetic abnormalities (MLL rearranged, E2A-PBX1 translocation, TEL-AML translocation, and other B-cell leukemias without hyperdiploidy). We applied an array-comparative genomic hybridization analysis on these patient samples. Additionally, we sequenced for microdeletions in VPREB1 and Ikaros.
Results: In 82% of the BCR-ABL like patients, we found an abnormality in one or more genes involved in B-lymphocyte development (PAX5, Ikaros, EBF1, E2A, VPREB1) versus 80% in the BCR-ABL positive patients versus 40% in the B-other patients. In PAX5 we report mono-allelic, bi-allelic deletions and inactivating point mutations. In Ikaros we both found deletions and presence of isoform6, based on a deletion of exon 3 to 7. We also have found mono-allelic deletions in EBF1. VPREB1 showed mono-allelic deletions and bi-allelic deletions, correlating with lower VPREB1 mRNA expression.
Conclusions: We describe a novel high-risk subgroup of pediatric B-cell acute lymphoblastic leukemia, representing a prominent part of the ALL. The clinical behavior of this group is comparable to BCR-ABL positive patients, but lacking a BCR-ABL fusion gene. B-cell development genes are frequently mutated. Currently, research is focusing on finding a specific genetic marker with future therapeutic options.