were studied jointly. BC pts developed G1 anaemia but the pts with CRC developed virtually no anaemia.

Results:

	1st cycle	3rd cycle	Final cycle	P
CDDP Group (n = 12) Mean Hb (g/dl)	14.7 ± 1.6	10.4 ± 1.2	8.5 ± 1.2	p < 0.0001
Median EPO (mU/ml)	5.3	31.5	1.8	p < 0.0001
(range)	(1.2–20.0)	(1.8–73.0)	(0.2–10.8)	–
CMF Group (n = 10)				
Mean Hb (g/dl)	12.4 ± 0.7	12.2 ± 0.7	11.5 ± 0.8	p < 0.002
Median EPO (mU/ml)	4.0	8.0	4.1	p = NS
(range)	(1.0–48.0)	(3.1–89.0)	(1.6–33.0)	–
5-FU + LV Group (n = 10)				
Mean Hb (g/dl)	12.0 ± 0.8	12.4 ± 0.8	12.9 ± 1.1	p = 0.054
Median EPO (mU/ml)	7.5	12.5	18.5	p < 0.045
(range)	(2.5–22.0)	(2.4–276.0)	(5.0–600.0)	–

Conclusions: a) The cisplatin schedules analysed were associated with intense inhibition of the EPO response, b) The inhibition caused by CMF was less intense; c) 5-FU + LV seems to stimulate the synthesis of EPO.

1482 PUBLICATION

Epoetin alfa (EPO) prevents anaemia and improves quality of life (QOL) in cancer patients (PTS) undergoing platinum-based chemotherapy (CT)

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To evaluate the impact of EPO on anaemia secondary to platinum-based CT, 52 pts with small cell lung cancer (n = 27) or ovarian cancer (n = 8) were included from Jun-95 to Nov-97. CT consisted of 6 courses every 21–28 days (d) of one of these schedules: CDDP + VP-16, CBDCA + VP-16, CBDCA + CTX, CDDP + PTX. All pts were initially non-anaemic (Hb > 11.5 g/dl), and were separated into two groups depending on whether their Hb values fell to ≤11.5 g/dl after the first or second course (Group A) or not (Group B). Group A pts were then randomized to receive EPO 150 U/kg SC three times weekly, starting on the first day of CT (Group A_{EPO}) or no EPO (Group $A_{no\ EPO}$). The Nottingham Health Profile was used for QOL analysis, and 39 pts were evaluated (A_{EPO} = 15, $A_{no\ EPO}$ = 11, B = 13).

Results:

Group	Initial Hb (mean ± SD)	Hb at inclusion (mean ± SD)	Final Hb (mean ± SD)	No. of pts transfused
$A_{no\ EPO}$ (n = 15)	12.8 ± 1.3	10.5 ± 0.8	8.8 ± 1.4	13 (87%)
p	*NS*	*NS*	*<0.001*	*<0.001*
A_{EPO} (n = 20)	12.5 ± 1.2	10.5 ± 0.8	11.5 ± 1.8	4 (20%)
p	*NS*	*<0.001*	*NS*	–
B (n = 17)	13.4 ± 0.9	12.4 ± 0.7	11.5 ± 1.3	0

At inclusion no significant differences between groups were found in QOL, but at the end of treatment, it was increased significantly (p < 0.05) in groups A_{EPO} and B versus group $A_{no\ EPO}$.

Conclusion: EPO prevents anaemia, reducing the risk for transfusion and improves QOL in pts undergoing platinum-based cyclic CT.

1483 PUBLICATION

Palliation of bone metastases: A survey of patterns of practice in Canada

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Purpose: To determine the patterns of practice of radiation oncologists in Canada for the palliation of bone metastases.

Methods: A survey was sent to 300 practicing radiation oncologists in Canada. Five case scenarios with bone metastases were presented.

Results: A total of 172 questionnaires were returned (57%) for a total of 860 cases. 819 cases (95%) were treated with radiotherapy and 708 cases (82%) with external local fields (LF). Of those LF employed, doses ranged from a single 8 Gy to 30 Gy/10 fractions. 571 cases (81%) were treated with a short course of radiotherapy (a single 8 Gy – 17%, 20 Gy/5 fractions – 64%). 71 cases (10%) were treated with 30 Gy/10 fractions. With respect to the primary cancer: lung, breast and prostate, the proportions of using a single 8 Gy were 16%, 16% and 31% (p = 0.056); 20 Gy/5 fractions, 65%, 64% and 51% (p = 0.22); and 30 Gy/10 fractions, 9%, 12% and 5% (p = 0.16) respectively. Half body irradiation (HBI), and radionuclides were recommended more frequently in prostate cancer than in breast cancer (46/172 vs 4/172, p < 0.0001; 93/172 vs 10/172, p < 0.0001 respectively). Biophosphonates were recommended more frequently in breast cancer than in prostate cancer (13/172-7% vs 1/172 – 0.6%, p = 0.001).

Conclusion: LF remains the mainstay of therapy and the most common fractionation for bone metastases in Canada is 20 Gy in 5 fractions compared with 30 Gy/10 fractions in US. Despite randomized trials showing a single 8 Gy fraction is equivalent, the majority of us still advocate 5 fractions. There is a trend of utilizing HBI more in prostate cancer and biphosphonates in breast cancer.

1485 PUBLICATION

Quality of life (QoL) and treatment-related symptoms in postmenopausal women with metastatic breast cancer (MBC) during hormonal treatment (HT)

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Purpose: Multicenter national study in patients (p) with MBC receiving HT.. Assessment of QoL in this subset of p. Specific survey of HT-related symptoms. Analysis of relation between QoL and HT. Patient's preference in MBC.

Methods: 226 p with MBC under HT were selected during a 9-month period. Two self-administered questionnaries were used: FACT-B for QoL and modified C-PET for symptoms (25 items). Centralised analysis of forms was carried out.

Results: Socio-demographic: 75% of p were older than 65 year and 92% had descendants and 42% reported sexual activity in last 12 months (m). HT: 50% antiestrogens, 27% aromatase-inhibitors and 24% progestins. Mean-time under HT was 15 m, being longer (21 m) for antiestrogens. The most frequent reported symptom was tiredness (79%), and 13 out of 25 symptoms were present in more than 50% of p (restlessness, decreased libido, depression, anxiety, muscle cramps, insomnia, constipation, weight gain, mouth-dryness, irritability, stress, difficulty to concentrate) Self-reported (SR) QoL, ranging 0 to 6 shows a mean of 3.77 with SD 0.51 and only 17.7% of p consider as bad (0–2) their QoL while 37.1% of p rate QoL as good or excellent (5–6). P receiving antiestrogens and with more than 12 m in HT report better QoL. For FACT-B subscales (quantitative value 0–4) means were physical 2.99, social/family 2.56, relationship with doctor 3.37, emotional 1.67, functional 2.15, other concerns 2.11. P with antiestrogens HT showed a better physical subscale and this domain shows a significant correlation with self-reported QoL.

Conclusions: Majority of MBC postmenopausal women under HT report many symptoms in a systematic surveillance. Intensity is predominantly mild. Mena SR-QoL is 3.77 (0–6 scale) being better for antiestrogens and for p with longer HT. For FACT-B better means were observed in relationship with doctor and social/family well being domains but physical well-being seems to show better correlation with SR-QoL. Lower score was obtained in emotional well-being. SR-QoL seems to be a consistent summary measurement that correlates with symptoms and specific tool (FACT-B). First-line HT and length of treatment (response) seems to correlate with better QoL

1486 PUBLICATION

Should the depression sub scale of the Hospital anxiety and Depression scale be used as a screen for depression in patients with advanced metastatic cancer?

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Introduction: The Hospital Anxiety and Depression scale (HAD) is used in outpatient clinics and elsewhere as a screen for depression in patients with advanced metastatic disease, using pre established cut off thresholds of 8 for all possible cases and 11 for all probable cases of depression. However the HAD has not been validated for use in this population and previous studies have suggested it does not perform equally when used in patients with differing disease status.

Aims: The aims of the study were to determine the efficacy of the depression sub scale in patients with advanced metastatic disease.

Method: Patients with a diagnosis of advanced metastatic cancer were asked to complete the HAD scale and were also interviewed by using the Present State Examination.

Results: 100 patients, fifty six females and 44 males age range 25–69 years, mean age 57.2 years were recruited into the study. The median survival of patients from the date of interview was 34 days. The prevalence of depression according to PSE criteria was 22%. The means score on the HAD depression sub scale was 8.9 and at cut off threshold of eight, 63% scored at this level or above and when the threshold was increased to eleven, 32% scored at this level or above. At a threshold of 8, the sensitivity was 81% and specificity 42% and at a cut off of 11 the sensitivity was 54% and specificity 74%. Patients were found to score highly on two question on feeling slowed down and the loss of enjoyment.

Conclusions: The depression sub scale of the HAD scale has lower sensitivity and specificity for detecting cases of depression in terminally ill patients that, in reported studies of patients with early or stable disease and mis classifies patients as cases of depression. The absence of somatic symptoms which have made the HAD scale popular for use with medically ill patients does not appear to influence the poorer discriminatory value of this scale in the terminally ill population. These factors should be taken into account when the HAD depression scale is used for research or in the clinical setting in patients with advanced metastatic disease.

1487 PUBLICATION

Reference center on quality of life in oncology: First results

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Quality of Life (QoL) became one of the most important outcome variables in modern medicine. During the last ten years reliable measures of QoL especially in oncology have been developed. Today's challenge is to incorporate these measures in clinical quality assurance programs and to establish QoL measures as clinical routine. Therefore the German Cancer Help (Deutsche Krebshilfe e.V.) granted a "Reference Center on Quality of Life in Oncology". Overall aim of this center will be the collection of information on any activity or study outcome relevant to QoL. Accordingly the scope of this center will be to support actively studies and activities on outcome research with focus on QoL and/or patients satisfaction.

The mandate of the reference center ranges from methodological counseling on how to assess QoL in a given setting, to participate in (multicenter) trials that incorporate QoL and to realize own specific research including the development of new instruments to measure QoL in specific oncological settings. The long-term aim of this project is to establish a databank on QoL for most tumor entities and in different treatment modalities, accessible for all care providers as well as for patients. Therefore the close cooperation with the German Cancer Society ("Deutsche Krebsgesellschaft") is mandatory. The philosophy of the center is that of a service unit for the oncology community.

The extend to which the offered services has been used is surprising: After one year of service the center is part of more than 40 studies/projects on QoL in oncology. These studies range from small exploratory studies in new fields of QoL in oncology (i.e. after PEG placement or in terminal care) to large multicenter trials (i.e. the National Kidney Cancer Project). Examples of results as well as of common problems in this field of research will be presented.

1488 PUBLICATION

The Quality-of-Life in the course of radiotherapy

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Purpose: The Quality-of-Life-Questionnaire QLQC-30 of the EORTC is a well known and valid instrument for measuring the Quality of Life (QoL) by focusing on the disease and treatment related syptoms of cancerpatients. Little research has been conducted investigating the changes in the QoL of cancerpatients in the course of a radiotherapy.

Method: NT1-T3 = 30 cancerpatients with various diagnosis received the QLQC-30 (german version) at three points of measurement: before (T1), during (T2), and after (T3) a six week radiotherapy.

Results: Significant changes from T1 to T2 could be found for five items: the patients felt weaker (31%), more nauseated (28%), more tired (34%), less anxious (54%), and had more difficulties to remember things (34%). Just one significant change could be found for the difference between T2 and T3: the patients felt less tired (36%).

Conclusion: There are significant changes in important components of QoL during a radiotherapy. Our study shows that the QLQC-30 is sensitive to the well known negative side effects of irradiation. Further studies will estimate the amount of the irradiation impact upon the QoL.

1489 PUBLICATION

The comparison of radiotherapy and radiotherapy plus pamidronat on pain palliation of metastatic bone disease

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Purpose: Radiotherapy (RT) and RT plus pamidronat were compared on the palliation of pain in patients with multiple bone metastasis.

Methods: Forty-nine patients with multiple bone metastases and had pain at least one part of his/her body included in this study. Twenty patients had RT (Group A), 29 patients had RT plus pamidronat (Group B). RT was applied 400 cGy/fr, totally 2000 cGy. Sixty mg pamidronat was given by intravenous infusion in 500 cc 5% dextrose during 2 hours. The mean follow-up period was 8.5 (11 months in the group A and 9.5 (4.2 months in the group B. There was no statistically significant differences in pre-treatment pain scores (subjective pain scores 0, 1, 2, 3) between groups (2.8 (0.41 in the group A, 2.7 (0.47 in the group B, $p = 0.428$)

Results: The post-treatment pain scores were 0.40 (0.51 in the group A and 0.45 (0.75 in the group B. No statistically significant difference was present ($p = 0.661$). At the end of the 3, 6 and 12 months, there was statistically significant decrease in pain scores in the group B. The values as follows: 0.85 (0.67 in the group A, 0.40 (0.50 in the group B ($p = 0.016$) at the end of the 3 months, 0.90 (0.70 in the group A, 0.27 (0.46 in the group B ($p = 0.046$) at the end of the 6 months, 1.8 (0.44 in the group A, 0.80 (0.73 in the group B ($p = 0.034$) at the end of the 12 months. At the end of the 3 months, there was no need for further RT but the need for analgesic was 22% in the group A, 7% in the group B. At the end of the 6 months, while RT was applied in group A, there was no need for RT in group B. The need for analgesic was 8% in the group A, 12% in the group B. At the end of the 12 months, RT was repeated 33% of patients in the group A and 10% in the group B. The need for analgesic was 20% and 15%. In the group A, two patients died at the end of the 3 months, 5 patients at the end of the 6 months, 3 patients at the end of the 12 months. In group B, 3 patients died at the end of the 3 months, 3 patients at the end of the 6 months, 4 patients at the end of the 12 months. We observed no side effects of RT, but there was nausea in 2 patients after pamidronat injection.

Conclusion: The RT and pamidronat combination provides more effective and long duration palliation at painful bone metastases compared only with RT.

1490 PUBLICATION

Limphoedema after breast cancer therapy – Surgical aspiration

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Introduction: The lymphoedema of the upper limb after breast cancer therapy is a long term morbidity event that ranges about 20% of women submitted to this therapy. Its treatment is classically conservative, with compression therapy (elastic garments), manual lymph drainage therapy and symptomatic medication. The different surgical approaches in an attempt to re-establish the lymph drainage had never shown good long-term results. Therefore, we developed a program of reducing volume by surgical aspiration in association with compression therapy.

Patients and Methods: We just included in this program women with lymphoedema that were adapted to the use of compression garments and that had been resistant to all the conservative treatments.

The surgical technique consists in to remove the hypertrophied and edematous fat by vaccum aspiration, through two 0.5 cm long incisions in the wrist and two identical incisions in the elbow. Between March 1991 and October 1998, 18 women, with a mean age of 61.4 years were submitted to this treatment.

Results: The median volume of the aspirate was 1650 ml (600–2900) and the percentual reducion of arm volume ranged between 9 and 43%. There was no complications. The median follow-up is of 65.8 months (6–96).

Conclusion: Surgical aspiration combined with permanent compression therapy is a palliative treatment that controls ann lymphoedema contributing to a significant improvement of quality of life of these patients.