acute nausea and vomiting and have a lower negative influence on delayed symptoms due to a less suppressive effect on endogenous corticosteroid levels.

229 ORAL

The efficacy of the NMDA receptor antagonist amantadine in the treatment of neuropathic cancer pain: A double blind, randomized, placebo-controlled trial

D. Pud[1], E. Eisenberg[2], A. Spitzer[1]. [1]*Ch. Spenser Department of Nursing, University of Haifa & The Technion;* [2]*Pain Relief Clinic Rambam Medical Center, Haifa, Israel*

Purpose: Neuropathic pain is present in about 25% of advanced cancer patients and remains a major clinical challenge. This pain is often associated with significant suffering and impaired quality of life. Recent evidence indicate that NMDA receptor antagonists can block pain transmission in spinal cord neurons, and reduce experimental pain in animals. However, their use in humans is limited due to high toxicity level. Amantadine (A) is a clinically available drug for chronic use in humans which was recently shown to be an NMDA receptor antagonist. The present study was aimed to test the analgesic efficacy of A in neuropathic cancer pain.

Methods: Fourteen cancer patients suffering from neuropathic pain were blindly assigned to receive I.V. infusions of either A (200 mg) or placebo, over a 3 hour period. Treatments were given 1 week apart, in a random order. Spontaneous pain (VAS), mechanical and thermal allodynia, as well as thresholds to thermal (TSA) and mechanical (Von Frey filaments) sensation and pain, were measured on an hourly basis during treatments.

Results: Amantadine produced around 60% reduction in spontaneous pain ($P < 0.01$) whereas placebo produced a much smaller, insignificant effect. No adverse effects were reported as a result of A treatment.

Conclusion: The clinically available NMDA receptor antagonist A reduces neuropathic pain in cancer patients. Further studies are needed to establish its long-term efficacy.

230 ORAL

Oral itasetron hydrochloride (DAU 6215Cl) versus ondansetron (OND): Comparable efficacy at a lower dose

H. Salwender[1], G. Egerer[1], R. Kempe[2], T. Voigt[2], H. Goldschmidt[1]. [1]*Hospital of Internal Medicine V, University of Heidelberg;* [2]*Clinical Research Department, Boehringer Ingelheim, D-55216 Ingelheim am Rhein, Germany*

Purpose: Experimental and early clinical studies show that itasetron hydrochloride (ITA) has higher potency (~10 times), a longer half-life (~12 h) and potentially higher bioavailability than OND. These features may result in improved prophylactic control of the acute emesis caused by moderately emetogenic (doxorubicin/cyclophosphamide-based) chemotherapy (MECT). This multicentre, double-blind, parallel-group trial investigates the efficacy and tolerability of 5 oral doses of ITA with the label dose of OND for this indication.

Methods: Histologically-confirmed cancer (excluding head and neck) patients (pts) (n = 104) due to receive MECT were given escalating b.i.d. doses of 0.5 (n = 16), 1 (n = 17), 2 (n = 18), 4 (n = 17) or 8 mg ITA (n = 16) or 8 mg b.i.d. OND (n = 20) for 3 consecutive days.

Results: Complete response (no emetic episode within 24 h of CT) rates were: ITA = 56% (0.5 mg), 88% (1 mg), 71% (2 mg), 71% (4 mg), 88% (8 mg); OND = 65% (differences not significant $p > 0.05$). Pts given 1 mg b.i.d. ITA had the longest times to first nausea (median 33 h:45 m) or emesis (21 h:00 m). Median times for OND were 6 h:45 m and 9 h:30 m. The tolerability of all treatments was assessed as "very" or "rather" good by over 80% of pts and physicians.

Conclusion: Oral doses ≥1 mg b.i.d. ITA have comparable efficacy and tolerability to 8 mg b.i.d. OND in pts receiving MECT. ITA may offer advantages over OND by delaying the onset of nausea and/or emesis. This warrants further investigation.

231 POSTER

Scalp hypothermia for 2 hours prevents alopecia after adriamycin based chemotherapy

H.H. Fiebig, J. Belzer, P. Klöpfer, O. Ciamango, J. Arends, K. Mross, C. Unger. *Tumor Biology Center at the University of Freiburg, Department for Medical Oncology, D-79110 Freiburg, Germany*

Purpose: For many patients hair loss is the most disturbing side effect of chemotherapy. We have investigated scalp hypothermia as a measure to prevent alopecia using a new technique.

Methods: 23 patients received adriamycin (≥50 mg/m²) or cyclophosphamide based combination chemotherapy like EC, ACO or CY + CDDP which results normally in a complete alopecia in >80%. Scalp hypothermia of 15°C was maintained for 2 hours starting 30 min. before chemotherapy which was administered up to 60 min. The alopecia preventing effect was quantified using a score from 0–8.

Results: 20/23 of the patients (87%) accepted scalp cooling which can result in a transient headache. *Satisfactory hair preservation was obtained in 90% of the patients* receiving a median of 4 cycles. No hair loss was observed in 55%, a mild alopecia WHO grade I in 35%. Only 10% showed a alopecia grade II. No complete alopecia was observed. In patients treated with CPT-11 ($T_{1/2}$ 10.6 h) scalp cooling was ineffective.

Conclusions: Scalp hypothermia to 15°C over a 2 hour period is in our hands a very effective measure in preventing alopecia following chemotherapy. A wig was not required in 90% of the patients. Adjuvant chemotherapy in breast cancer is feasible without hair loss.

232 POSTER

An evaluation of etiology and risk factors of bacteremia in patients with hematological malignancies

A.K. Zacharof, C. Petrogiannopoulos, E. Vartzioti, M. Mouroutsou, G. Panagos, J. Poulikakos. *Hellenic Red Cross Hospital, Athens, Greece*

Objective: To ascertain the risk factors, etiology and outcome of bacteremia in patients with hematological malignancies.

Material and Methods: We undertake a retrospective case-control study, conducted over a 10-years period (1986–1995). The study included 106 patients grouped as follow: 53 patients with bacteremia and hematological malignancies (group A, i.e. the cases) and 53 patients, randomly selected in the same ward of the cases in the study period, with hematological malignancies and without bacteremia (Group B, i.e. the controls).

Results: A total of 63 episodes of bacteremia in 53 patients of Group A, namely 21 AML, 15 NHL, 6 ALL, 5 HD, 3 MM, 3 other malignancies. The most frequently etiologic agents were: coagulase-negative Staphylococci (36%), Pseudomonas aeruginosa (10%), Escherichia coli (10%), Staphylococcus aureus (4%). On univariate analysis, the risk factors for bacteremia were neutropenia (neutrophils <0.5' 109/1 for more than 6 days) ($p = 0.03$ Group A vs Group B), CVC usage ($p = 0.04$), absence of antibiotic prophylaxis ($p = 0.03$) and relapsed neoplasms ($p = 0.04$). The response to the specific therapy was favorable in 88 episodes (83%); death occurred in 9 (17%). Recurrences arose in 5 patients (9%).

Conclusions: Our study confirms the observation that in the last years the epidemiology of bacterial sepsis in neutropenic patients has been switched from Gram– to Gram+ microorganisms. This result probably correlates with the increased use of CVC and with the quinolones antibiotic prophylaxis. Although bacteremia in our series have been characterized by a low mortality rate, this condition requires special attention from the physician who must recognize and treat it promptly.

233 POSTER

Intravenous (i.v.) itasetron hydrochloride (DAU 6215Cl): An effective alternative to ondansetron (OND)

L. Mignot[1], M. Untereiner[2], A. Riviere[3], J.-Y. Douillard[4], P. Marti[5], F. Morvan[6], M. Marty[7]. [1]*CMC Foch Pavil, J. Godard, 92150 Suresnes;* [2]*Clinique Claude Bernard, 57070 Metz-Borny;* [3]*Centre Régional F Baclesse, Caen, Cedex;* [4]*Center René Gauducheau, Saint Herblain;* [5]*Clinique Marzet, 64000 Pau;* [6]*CH René Dubos, 95301 Cergy Pontoise;* [7]*Hôpital Saint Louis, 75010 Paris, France*

Purpose: This multicentre (n = 20), double-blind, parallel-group study assessed the efficacy and tolerability of i.v. itasetron hydrochloride (ITA) with a maximally effective i.v. dose of OND.

Methods: Histologically-confirmed cancer (excluding head and neck tumours) patients (n = 219) to be given ≥70 mg/m² cisplatin for the first time,

were randomised to receive single doses of 3 (n = 57), 9 (n = 54) and 18 mg ITA (n = 53) or 32 mg OND (n = 55) by slow infusion (15 mins), 30 mins before the start of chemotherapy.

Results: The main efficacy results are tabulated below:

	ITA			OND
	3	9	18	32
Complete response (no emetic episode in 24 h)	56%	41%	43%	49%
Complete response at 7 days	77%	74%	66%	66%
No nausea; first 24 h	46%	43%	47%	47%
Use of "rescue" medication, first 24 h	26%	24%	21%	35%

Adverse events were similar across all groups and were those expected for this class. All treatments were well tolerated.

Conclusion: Intravenous doses ≥3 mg ITA have comparable efficacy and tolerability to 32 mg OND.

234 POSTER

Management of febrile neutropenia in 272 episodes in solid tumor patients with once daily administration of ceftriaxone

M. Karthaus[1], H.-H. Wolf[2], D. Kämpfe[3], J. Ritter[4], G. Peters[4], H. Jürgens[4]. [1]*Med. Hochschule Hannover;* [2]*Univ. Magdeburg;* [3]*KKH Lüdenscheid;* [4]*Univ. Münster, Germany*

Purpose: Evaluation of the efficacy of ceftriaxone in a multicenter non randomized trial as first line treatment in solid tumor patients with fever and neutropenia. Additional antibiotics were added as clinically indicated.

Methods: Pts were included with neutrophil count <1.000/μl, fever >38.5°C and/or C-reactive-protein (CRP) >1.0 mg/dl. 272 neutropenic febrile episodes were documented in 234 pts with solid tumors from 34 centers from Febr 92 to Jan 96. Mean maximum temperature 39.1°C (SD ± 0.6), mean neutrophil count 485/μl (SD ± 324). Median duration of neutropenia 8 days, mean treatment duration 6.6 days (SD ± 3.1). Initial treatment was ceftriaxone alone in 153 episodes, and combination therapy in 119 cases (aminoglycosides ± glycopeptides).

Results: Response to initial treatment was obtained in 197 episodes (72.4%). Nonresponders (n = 75) to initial treatment responded to an escalated or alternate antibiotic regimen in 93.3% (n = 70). There were no infection related deaths, 3 pts died during the observation period due to tumor progression. Positive microbiological cultures were documented in 55 episodes (20%).

Conclusion: Ceftriaxone can be considered as a safe and adequate first line treatment in febrile neutropenia in patients with solid tumors. The addition of glycopeptides or aminoglycosides should be considered in non response or suspected non sensitive microorganism.

235 POSTER

An audit of Hickman line complications in patients with solid tumours

V.J. O'Neill, T.R.J. Evans, S.B. Kaye. *CRC Dept of Medical Oncology, University of Glasgow, UK*

In this retrospective study the complications arising from the use of Hickman catheters in patients with solid tumours was assessed. Sixty-nine patients (50 female and 19 male) underwent insertion of 80 Hickman catheters between 1994 and 1996. Three were inserted surgically, and 77 under radiological guidance. Tumour types were: breast cancer (40), gastro-oesophageal (21), colonic cancer (4), others (4). Catheters remained in place for a total of 7242 days (median 101 days, range 1–278).

Complications occurred in 32 patients (46%) and 7 patients suffered more than one complication. Early complications occurred in 6 patients: 4 pneumathoraces, 1 arterial puncture, 1 failed placement. Twenty-eight (41%) of patients developed 38 late complications: superficial sepsis (9), systemic sepsis (11), thrombosis (9), haemorrhage due to overanticoajulation (1), catheter dislodgement (4) and blockage (1). There was no association between age, site of insertion or catheter gauge and development of pneumothorax, but 3 of 4 patients had a BMI < 22, and 2 a BMI < 20. 11 incidences of systemic sepsis occurred in 9 patients (sepsis rate 1.52/1000 catheter days). The majority (7/11) occurred during neutropenia but only three were preceded by superficial sepsis. Venous thrombosis occurred in 9 patients, and 4 of 9 lines required removal for resolution of the thrombus.

In summary, Hickman lines offer a generally safe and convenient method for the administration of infusional chemotherapeutics although the overall complication rate (46%) is high.

236 POSTER

Palliative treatment of accessible solid tumors with intratumoral cisplatin/epinephrine injectable gel

H. Burris III, D. Castro, J. Glaholm. *Brooke Army Medical Center, Fort Sam Houston, TX; UCLA School of Medicine, Los Angeles, CA, USA; Queen Elizabeth Hospital, Birmingham, England*

Purpose: We are evaluating palliation of accessible solid tumors (e.g., malignant melanoma, metastatic breast & lung cancer, head & neck SCC) using intratumoral injection of IntraDose™ (cisplatin/epinephrine) Injectable Gel (CDDP/epi gel) that provides prolonged and high intratumoral drug concentrations.

Methods: Three separate multicenter studies include 103 patients with accessible, visible, or palpable solid tumors of various histologic types who refused, had failed, or were not otherwise candidates for conventional therapy. The open-label pilot, doseescalation trial of CDDP/epi gel (1–6 mg CDDP/cm^3 tumor volume) evaluated feasibility, safety, and efficacy; two other identical open-label Phase III trials used a dose of 2 mg CDDP/cm^3. CDDP/epi gel was injected intratumorally at weekly intervals for up to 6 weeks.

Results: Pilot Study: 45 patients with 82 evaluable tumors (<0.1–109 cm^3) completed study; mean total cumulative doses of 0.49–46 mg of CDDP administered in 1–4 treatments with CDDP/epi gel. No dose-limiting side effects occurred. Objective tumor responses (CR + PR) occurred in 50% of tumors of which 40% were complete responses; median CR duration was 160 days (range 28–469 days). Phase III Studies: 68 patients are enrolled in ongoing studies in Europe and the U.S. Evaluations include tumor responses, palliation of symptoms (pain, obstruction), and quality of life.

Conclusions: Treatment with CDDP/epi gel was feasible and well-tolerated. No nephrotoxicity, neurotoxicity, or ototoxicity has been identified to date. This intratumoral chemotherapy may prove useful for local primary or adjunctive palliative therapy in selected patients with accessible tumors.

237 POSTER

Incidence and sonographic features of hepatosplenic candidiaisis in patients with febrile neutropenia

M. Karthaus, J.G. Meran, G. Hübner, T. Scharmann, C. Elser, J. Novotny, B. Hertenstein, A. Ganser. *Med. Hochschule Hannover, Department of Hematology, Hannover, Germany*

Purpose: Hepatosplenic candidiasis is a well known complication of patients treated with high-dose chemotherapy. Febrile neutropenia is a major risk factor for the onset of systemic fungal infections. Early detection and long lasting antifungal therapy are important prognostic factors. Therefore evaluation of incidences and sonographic features in hepatosplenic candidiasis is required.

Methods: Pts undergoing high-dose chemotherapy were examined by routine abdominal ultrasound scan. Whenever clinical signs of infection occurred, i.e. fever >38.5 °C, the pts were reevaluated. Within a two-months period from Dec 96 to Jan 97, 90 consecutive pts were examined with a 3.5 MHz-convex-phased-array (Kranzbühler Logiq 500).

Results: In 3 pts hepatic and/or splenic microabscesses were detected, 2 pts showed a typical "wheel in wheel sign", 1 pt had multiple dicrete hypoechoic lesions in the liver and spleen. A changed structural pattern, showing inhomogeneity of liver and spleen, was documented in 2 further pts, which was highly suspicious for an evolving systemic hepatosplenic candidiasis.

Conclusion: Ultrasound is a sensitive and easily accessable method to detect microabscesses and other typical morphological changes allowing early detection of hepatosplenic candidiasis. The incidence in our patient sample was 3.3%. Therefore we would recommend abdominal ultrasound screening for all patients with febrile neutropenia to improve antimycotic treatment strategies.

238 POSTER

Correlation between weight loss and appetite profile in cancer patients

J. Arends[1], P. Jerg[2], M. Just[1], C. Bode[2], C. Unger[1]. [1]*Dept. Medical Oncology, Tumor Biology Center Freiburg;* [2]*Inst. for Biological Chemistry and Nutritional Science, Univ. Stuttgart- Hohenheim, Germany*

Purpose: It is not known whether nutritional preferences change with progression of tumor disease. We studied extent and direction of appetite in 30 subjects with solid tumors in 3 groups: A: N = 9 patients after curative