remissions and prolong survival. We examined the clinical results of low dose Idarubicine, Vincristin, Prednisone, and G-CSF plus ATRA in patients with poor risk MDS.

Methods: Six patient [subgroups were RAEB (n = 2), RAEBt (n = 2), CMML (n = 2)] received Idarubicine 5 mg/m^2/week, Vincristine 1 mg/m^2/week, Prednisone 1 mg/kg/day for four week. G-CSF (5 μg/kg/day) was given on days 2–6, 9–13, 16–20 days. The dose of G-CSF was adjusted to normalize the ANC if the pre-treatment ANC value was less than 1.500/ml, or to double the ANC if above 1.500/ml. ATRA (25 mg/kg/day) was started at 29th day of treatment. The minimum follow-up duration of all patients was 12 weeks.

Results: Among six patients (therapy for at least 12 weeks), two patients showed no response while four patients showed hematopoietic responses. Of four responding patients, three had tri-lineage responses, one had bi-lineage responses. All responding patients showed at least % 50 reduction in red cells requirements and % 80 reduction in platelets requirements.

Conclusion: We concluded that low dose Idarubicine, Vincristine, Prednisone, and G-CSF plus ATRA combination regimen is effective in improving the cytopenias in MDS and deserves further investigation.

1375 PUBLICATION

Results of primary irradiation in non-Hodgkin lymphoma stage I and II and analysis of recurrences

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Purpose: Evaluation of primary irradiation in stage I and II non-Hodgkin lymphoma, definition of subgroups and analysis of recurrencies.

Methods: 87 patients (47 male, 40 female) median age 63 yrs. underwent primary irradiation due to NHL stage I (n = 60) and II (n = 27). Low grade was presented in 36 patients (pat.) and high grade in 51 pat. A nodal involvement showed 58 pat. and an extranodal involvement 29 pat. A supradiaphragmal localisation occurred in 65 pat. and infradiaphragmal in 17 pat. A median dose of 40 Gy was delivered (single fraction 1*–2 Gy; *twice a day). Recurrence occurred in 41 pat at 9.2 mort (median) after treatment in 28 pat. stage I and 13 pat. stage II, with in field and border n = 8 only.

Results: Overall survival at 5 and 10 yrs (yr-sr) was 69% and 52% with a better survival of male pat. at 10 yrs (59% vs. 43%). No significant difference was seen comparing stage I and stage II (72% and 51% vs. 65% and 50.3%; 5 and 10 yr-sr). Patients with extranodal involvement survive signifivant better than pat. with nodal involvment (86% and 69% vs. 59% and 44%; 5 and 10 yr-sr; p = 0.0082). We also observed better survival in younger pat. <63 yrs. There was no influence of irradiation dose </> 40 Gy. Pat. with a recurrence >9.2 mon. had significant better survival compared to pat. <9.2 mon. (67% and 45% vs. 42% and 23%; 5 and 10 yr-sr; p = 0.026). In treating recurrence a complete remission could be achieved in 13 pat. showing benefit in combining irradiation and chemotherapy.

Conclusion: Irradiation alone is sufficient to control early stage NHL with a better outcome of extranodal presentation. The high rate of recurrences depends mostly on insufficient staging. Recurrences should be treated with chemotherapy and irradiation.

Urological malignancies

1376 ORAL

Outcome following high dose rate (HDR) brachytherapy (BT) and external beam radiation for localized prostate cancer

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Purpose: To evaluate a new interdisciplinary therapy protocol for survival, morbidity and prognostic variables for men with prostate cancer.

Material and Methods: The files of 189 men aged in median 69 years (44–84) receiving curatively intended combined high dose rate (HDR) 192 Iridium-brachytherapy (BT) and external beam radiation (EBR) for localized prostate cancer were recorded prospectively. Hundred and twenty-seven patients had T1–2 tumors, and 62 patients had T3 tumors. The total planned dose applied by external beam radiation was 50 Gy in the small pelvis, and 40 Gy in the prostate by in-field-dose modification. The HDR-brachytherapy was delivered in two fractions. The dose per fraction was 15 Gy for the target.

Results: Mean survival was 6 years (range 12–143 months), 76.7% of the patients survived and 86.3% were disease-free. The biochemical non-evidence of disease rate (bNED) was 78%. Univariate survival analysis revealed that low stage (T1–2), low grade (G1–2), normal PSA status after radiation therapy, and no adjuvant hormonal treatment were associated with long survival. However, the stratification for adjuvant hormonal treatment was not according to random. In multivariate analyses PSA status was the only independent prognostic factor in terms of survival.

Conclusion: The results confirm that HDR-BT combined with EBR is curative and especially effective in high risk cases of localized prostate cancer.

1377 ORAL

Conformal proton therapy for prostate carcinoma

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Purpose: Evaluate the role and optimal dose of radiation therapy required to eradicate prostate cancer utilizing conformal proton beams to deliver precision therapy.

Methods: 643 patients with localized prostate cancer were treated with protons. The patients received 74 to 75 CGE (Cobalt Gray Equivalent) at 1.8 to 2.0 CGE per fractions. The patients were evaluated for response to therapy and treatment related toxicity.

Results: Overall biochemical disease-free survival rate was 79% at five years. The rate was dependent upon both the initial PSA and the post-treatment PSA nadir, with patients who had an initial PSA of <4.0 ng/ml and those with nadirs <0.51 ng/ml having five year biochemical disease-free survival rates of 89% and 91% respectively. Minimal radiation proctitis was seen 21% of patients; toxicity of greater severity was seen in less than 1% of patients.

Conclusion: Conformal proton therapy to 74–75 CGE produced minimal treatment related toxicity and excellent PSA normalization and disease-free survival in patients with low initial PSA levels.

1378 ORAL

Effect of neoadjuvant (Short Course) LHRH analogue treatment with radical radiotherapy on long term hormonal status of patients with localised prostate cancer

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Introduction: Neoadjuvant hormone cytoreduction before local radiotherapy has been shown to improve tumour control in three phase III trials and has been adopted as a standard treatment for localised prostate cancer by many centres. However, the issue of long term endocrine effects of this treatment has not been adequately addressed.

Patients and Methods: We have evaluated the endocrine effects of short-term neaoadjuvant LHRH agonist administration (mean number of monthly depot injections: 3.7 months) followed by radical radiotherapy in 419 patients with localised prostate cancer treated between 1989 and 1997. We analysed levels of serum testosterone (n = 852), LH (n = 799) and FSH (n = 801) at four phases of management, prehormone (PH), on hormone therapy (OT), within 26 weeks after completing therapy (R) and on long term follow-up (F) (median: 54 weeks).

Results: Suppression of pituitary gonadotropins and testosterone following administration LHRH agonist and their recovery after cessation of the drug was clearly observed. When comparing PH and F levels median serum testosterone levels decreased from 16 nmol/l to 14 nmol/l (p = 0.018), median serum LH increased from 5 U/l to 8 U/l (p < 0.0001) and median serum FSH levels increased from 6 U/l to 20 U/l (p < 0.0001). Serum testosterone levels returned to within the normal range in 91.2% of patients with a compensatory rise in serum levels of luteinizing hormone.

Conclusion: Our data suggest a minor degree of residual gonadal dysfunction after short-term administration of LHRH agonists and radical radiotherapy. Further evaluation of testicular radiation dose will allow an estimate of the effects of each component of combined modality treatment.