

30.5–47%) was the lower than that of large cell, T-cell lesions (54.9, range 5–80.5%) whilst Burkitt's lymphoma lesions had the highest mean apoptotic fractions (68.5, range 48.5–87%).

**Conclusions:** Apoptotic fraction of MNHL in childhood affects mean nuclear volume and may explain difficulties in classifying lesions on nuclear size and appearance only. However, the relationship between the mean, although somewhat variable, apoptotic fractions of Burkitt's lymphoma versus large cell lesions and present treatment outcome (75–85 versus 50–70% survival) justifies further study.

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PUBLICATION

### **Bendamustin – Relapse therapy in patients with low grade non Hodgkin's lymphoma (NHL)**

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**Purpose:** Low grade NHL rarely are showing complete and sustained remissions after first line cytostatic therapy making new options for relapse therapy necessary.

**Methods:** Since January 1995, 27 patients (pts) with advanced and refractory low grade NHL (lymphocytic 13, cbcc 10, immunocytic 2, centrocytic 2) were included in this monoinstitutional trial. Pts were pretreated with 1–4 (median 2) cytostatic combinations. Bendamustin was given dependant on weight (<50 kg: 100 mg, >50 kg: 200 mg) as an one-hour infusion on two consecutive days every three weeks until stable disease (NC), partial (PR) or complete remission (CR) could be documented. In case of further progression, treatment was stopped.

**Results:** So far, 23 pts are evaluable for response and toxicity. 2 pts (9%) achieved CR, 14 pts (61%) PR and 3 pts (13%) NC, while 4 pts (17%) showed PD. The preliminary median remission duration is 8 months (range, 2–14). Side effects were mild and restricted to nausea and myelosuppression WHO-grade 1 and 2.

**Conclusions:** Bendamustin is an active and well-tolerated cytostatic drug in relapsed low grade NHL. Further controlled investigations are warranted.

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PUBLICATION

### **Magnetic resonance imaging of bone marrow versus biopsy in malignant lymphoma**

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**Purpose:** Bone marrow biopsy of the posterior iliac crest is routinely performed for staging of malignant lymphoma. Abnormal magnetic resonance imaging (MRI) signals of bone marrow is also reported to be indicative of bone marrow involvement. In this study, we aimed to evaluate the role of MRI in detecting bone marrow infiltration in patients with malignant lymphoma.

**Methods:** 60 patients with malignant lymphoma were studied. Patients were evaluated prior to initiation of the treatment. Unilateral bone marrow biopsy of the posterior iliac crest and MRI of lumbar spine were performed. Analysis of the results were based on the assumption that histologic examination of core biopsies of the posterior iliac crest is the ultimate method of detecting bone marrow involvement.

**Results:** Among 60 patients evaluated, MRI findings of 52 patients were deemed to be positive or negative for radiologic evidence of unequivocal tumor involvement by 3 radiologists. MRI intensity were suspicious in 8 patients. The sensitivity and specificity of MRI of 52 patients were found to be 86% and 90% respectively.

**Conclusion:** Although limited in number, these results suggest that MRI of bone marrow is a fairly sensitive, noninvasive method and might be of potential value in detecting bone marrow infiltration in malignant lymphoid neoplasms and can be utilised, as a useful adjunct to standard staging procedures.

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PUBLICATION

### **Initial clinical features in patients of various age with non-Hodgkin's lymphomas**

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**Purpose:** The initial clinical features of non-Hodgkin's lymphomas (NHL) were studied in 606 patients of various age.

**Results:** Only high-grade NHL were diagnosed in childhood. Lymphomas of high-grade malignancy were predominating in adults too, but the frequency of low-grade NHL was increasing with the age. Fifty-five per cent of cases NHL in children originated in extranodal tissue. Primary NHL of various lymph nodes were present in most adult patients. Favoured extranodal sites in adults and children included the digestive tract and Waldeyer's ring. The most frequent sites of primary NHL of digestive tract were the stomach in adult and the intestines in children. Primary NHL of the spleen were more frequent in adults, especially over 60 years. Retroperitoneal and mesenteric lymph nodes were most often involved in children, mediastinal lymph nodes in teen-agers, peripheral lymph nodes – in adults.

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PUBLICATION

### **Combined chemotherapy-radiotherapy in I-II stage of non-Hodgkin's lymphomas**

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**Purpose:** We have reported the results of combined chemotherapy-radiotherapy in 98 previously adult patients with localized non-Hodgkin's lymphomas (NHL; stage I-II-48, stage II-II-50). There were 78 patients with high- and intermediate-grade and 20 patients with low-grade NHL.

**Methods:** All patients received 3 courses of CHOP in I phase, involved radiotherapy in II phase, and final 3 courses of CHOP chemotherapy in III phase with following maintenance therapy.

**Results:** Thirty seven (92.5%) patients had a complete response and 2 (5.0%) had a partial response in I-II stage of high- and intermediate-grade NHL. Twenty two (57.3%) patients from unfavorable group had a complete response and seven (18.4%) had a partial response in II-II stage. The complete remission rate was achieved in all patients with low-grade NHL in I-II stage and in 11 (91.7%) cases with II-II stage. The actuarial survival at five years in unfavorable group was 79.4% in I-II stage and 40.0% – in II-II stage. The actuarial survival at five years for favorable group was 100% in I-II stage and 73.3% – in II-II stage.

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PUBLICATION

### **Relationship between rate of "in-field" bone marrow regeneration and radiation dose in patients with Hodgkin's disease**

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**Purpose:** To evaluate relationship between absorbed dose and rate of irradiated BM regeneration after combined modality treatment (CMT) of patients with Hodgkin's disease (HD).

**Materials:** BM scanning was performed 1–84 months after CMT of 69 patients with HD. Absorbed doses ranged from 28–32 Gy to 38–45 Gy. BM activity was estimated semiquantitatively: grades 1–2 – no or some activity, grades 3–4 – partial or complete regeneration.

**Results:** Irrespective of absorbed dose (in the range of 28–45 Gy) during 1–5, 9 months after CMT hematopoietic activity was reduced in 70 of 71 irradiated regions. 6–12 months after radiotherapy scintigraphic signs of BM regeneration (grades 3–4 of tracer uptake) were mentioned in 12 of 17 areas (71%) irradiated with 28–32 Gy and in only 5 of 16 (28%) – with 38–45 Gy ( $p < 0.05$ ). Thirteen and more months after the end of CMT percent of BM regeneration was still dose dependant: 77% (in 44 of 57 areas) – after 28–32 Gy and 51% (in 36 of 71 areas) after 38–45 Gy ( $p < 0.05$ ).

**Conclusion:** After irradiation with 28–32 Gy rate of in-field BM regeneration is higher than after irradiation with 38–45 Gy. BM recovery after conventional CMT of patients with HD is dose dependant.

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PUBLICATION

### **Results of mantle irradiation alone in adult patients with clinical stage (CS) I and II Hodgkin's disease (HD) with low probability of abdominal involvement and good prognostic factors**

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**Background:** Since 1988 we have used mantle irradiation alone for patients with CS I or II HD with low probability of abdominal involvement at laparotomy