

Leukemia

A case report of childhood acute lymphoblastic leukemia with leukoencephalopathy that responded to oxygenation under hyperbaric pressure therapy.

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In this report, we described a case of acute lymphoblastic leukemia with leukoencephalopathy that responded to oxygenation under hyperbaric pressure (OHP) therapy. The patient was 6 year-old female who was diagnosed as acute lymphoblastic leukemia (ALL) one year and 9 months earlier. After the first relapse of the central nervous system (CNS) leukemia, intrathecal administration of methotrexate (MTX) and skull irradiation induced CNS remission. The patient was readmitted because of second CNS relapse. After the third administration of weekly intrathecal MTX injection, apathy and finger tremor were observed. Her conscious disturbance continued for two weeks and magnetic resonance imaging (MRI) revealed abnormal findings in the white matter of her brain. Subsequently OHP therapy was commenced, and the conscious disturbance was improved gradually. One month later, neuro-disturbance resolved completely and the findings of MRI were improved. We could not find any case of leukoencephalopathy which was treated with OHP in the literature. But our case suggested that OHP therapy is valuable in patient with leukoencephalopathy in the early stage.

Bone marrow oedema and aseptic osteonecrosis in children and adolescents with acute lymphoblastic leukaemia or non-Hodgkin-lymphoma treated with hyperbaric-oxygen-therapy (HBO): an approach to cure? -- BME/AON and hyperbaric oxygen therapy as a treatment modality.

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Klin Padiatr. 2004 Nov-Dec;216(6):370-8.

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BACKGROUND: There is a striking need for additional therapies of bone marrow oedema (BME) and aseptic osteonecrosis (AON) in pediatric oncology patients. Hyperbaric oxygenation (HBO) therapy used in the treatment of osteoradionecrosis is demonstrated effectiveness. Aim of this retrospective analysis was to investigate whether HBO-therapy might lead to subjective as well as objective effects in the treatment of BME and/or AON in paediatric oncology patients with acute lymphoblastic leukaemia (ALL) or Non-Hodgkin lymphoma (NHL). **PATIENTS AND METHODS:** Between 11/1988 and 01/2001 27/291 (9.3 %) patients with ALL or NHL were diagnosed with a BME and/or AON in the Clinic for Pediatric Oncology, Haematology, and Immunology at University of Dusseldorf. 19/27 patients were submitted to HBO-therapy. Patients received average 45 HBO-treatments per patient (min. 13, max. 80 treatments). The affected regions were re-evaluated with MRI for radiological extent of lesions every 3 months. Pain in its intensity and localization was serially recorded during HBO-therapy as key symptom in 11 of 19 patients. **RESULTS:** 27 patients (15 females, 12 males; mean age at diagnosis of malignancy 8.2 ± 4.7 (SD) years, range 7 months to 16 years) presented with 138 lesions. 133/138 lesions were localised in the lower extremities. At diagnosis of BME and/or AON, 78/133 lesions were shown in females and 55/133 lesions in male. Girls < 10 years predominantly presented BME (33 BME vs. 6 AON), girls aged > 10 years predominantly offered AON (28 AON vs. 11 BME). BME was more often exhibited in boys < 10 years (34 BME vs. 10 AON) and rarely in boys > 10 years (4 BME vs. 6 AON). 11 patients treated with HBO-therapy were serially evaluated for pain intensity throughout their HBO-therapy courses by visual analogue scale (VAS) assessment. During the first 15 treatment courses the HBO-therapy a clear-cut reduction of pain was observed. The mean pain score before the first HBO-treatment unit was 2.4 ± 2.7 ($X \pm SD$), decreased before the fifth to 1.6 ± 1.7 and prior to the 35 (th) and 40 (th) HBO treatment to 0. Girls < 10 years treated with HBO showed an increase of BME (31 \rightarrow 46) and declining AON numbers (6 \rightarrow 2). Girls > 10 years with and without HBO-therapy showed decrease of BME lesions (7 \rightarrow 4 vs. 4 \rightarrow 0), whereas AON increased in the HBO-treated group (28 \rightarrow 29) as well as the non-treated group (0 \rightarrow 4). Males < 10 years showed an increase in BME lesion numbers despite HBO intervention (24 \rightarrow 26). The AON lesion numbers dropped in parallel (6 \rightarrow 3). Male patients not treated with HBO showed constant numbers of BME

(11-->11) and a decreased numbers of AON (4 --> 2). All differences are statistically not significant.

CONCLUSIONS: Children and adolescents diagnosed with ALL or NHL have a risk for accruement of BME and/or AON irrespective of the age, with an almost exclusive involvement of the lower extremities. Lesions of pedal bones and ankle joints predominantly affect children < 10 years. Lesions of knee and hip joints predominantly affect children > 10 years. In children < 10 years of age we demonstrate declining AON numbers and conversion of AON to BME thereby implicating possible beneficial effect of HBO in such patients. HBO failed to show beneficial effect on BME whether by preventing new lesions or by improving existent lesions in children > 10 years.

Endosonographic diagnosis of pneumatosis cystoides intestinalis in infancy.

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Tech Coloproctol. 2002 Sep;6(2):121-3.

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We report pneumatosis cystoides intestinalis in a 10-month-old girl who developed bloody diarrhea following chemotherapy for leukemia. The diagnosis was made only by colonic endoscopic ultrasonography, whereas the abdominal plain radiogram and computed tomography failed to elucidate the diagnosis. She was successfully treated with hyperbaric oxygen therapy. Wider application of endoscopic ultrasonography may lead to the more frequent detection of pneumatosis cystoides intestinalis, currently a rare disorder.