Submitted by Sophia Polychronopoulou

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INTRODUCTION: Treatment results for pediatric non-Hodgkin's lymphoma (NHL) continue to improve internationally.
OBJECTIVE: Our goal was to evaluate patient characteristics in our series of patients with NHL and outcomes for the last 16 years (1990–2006).
METHODS: Our patients included 52 newly diagnosed children (11 girls) with a median age of 8.40 years (range: 0.33–14.5 years). Histology results included B-lymphocyte NHL, T-lymphocyte NHL, and Ki-1 in 35, 12, and 5 patients, respectively. In each 5-year period, 14 (3), 17 (3), and 21 (5) patients (girls) were diagnosed, respectively. Common presenting sites were the mediastinum (16), neck area (14), and abdomen (10). Disease was at stage I, II, III, and IV in 3, 14, 23, and 7 patients, respectively. Treatment varied over time. Berlin-Frankfurt-Munich (BFM) protocols had been applied since 1995 (BFM-NHL-90), and since 1997 the BFM-NHL-95 protocol had been applied. Irradiation was given to 5 patients (2 with B-NHL, 3 with T-NHL), and autologous stem cell transplantation was performed on 4 patients, all with B-NHL (1 with central nervous system disease, 1 with residual disease at the end of treatment, and 2 at relapse).
RESULTS: At this writing, 41 patients are alive; 39, 2, and 1 are in first, second, and third remission, respectively. In total, 9 have succumbed (2 died soon after admission in other hospitals as a result of acute-phase complications), and 5 patients died during the first decade of our retrospective study (with T-histology and extensive disease). The event-free survival rate is 74.4% (39 of 52 patients), and the overall survival rate is 80.9% (41 of 52 patients), for a median follow-up time of 6.1 years (range: 0.01–14.7 years) for all patients. For the 39 patients treated with the BFM-95 protocol since 1997, event-free survival and overall survival rates are 79.4% and 88.2%, respectively, for a median follow-up time of 4.8 years.
CONCLUSIONS: Overall and event-free survival rates and outcome of our patients with NHL treated during the last 16 years are standing high. There has been limited use of irradiation and stem cell transplantation.

SERUM LEVELS OF *MYCN* AMPLIFICATION IN NEUROBLASTOMA WITH TUMOR-RELEASED DNA BY REAL-TIME QUANTITATIVE POLYMERASE CHAIN REACTION

Submitted by Tohru Sugimoto

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INTRODUCTION: *MYCN* amplification (MNA) indicates a poor prognosis in neuroblastoma and is routinely assayed for therapy stratification.
OBJECTIVE: We aimed to develop a diagnostic tool to predict *MYCN* status by using serum DNA, which, in patients with cancer, predominantly originates from tumor-released DNA.
METHODS: Using DNA-based real-time quantitative polymerase chain reaction, we simultaneously quantified *MYCN* (2p24) and a reference gene, *NAGK* (2p12), and evaluated *MYCN* copy number as a *MYCN*/*NAGK* ratio in 87 patients with neuroblastoma whose *MYCN* status had been determined by Southern blotting. Of these patients, 17 had *MYCN*-amplified neuroblastoma, and 70 had nonamplified neuroblastoma.
RESULTS: The serum *MYCN*/*NAGK* ratio in the MNA group (median: 199.32; range: 17.1–901.6 [99% confidence interval: 107.0–528.7]) was significantly ($P < .001$) higher than that in the non-MNA group (median: 0.87; range: 0.25–4.6 [99% confidence interval: 0.82–1.26], Mann-Whitney *U* test). The sensitivity and specificity of the serum *MYCN*/*NAGK* ratio as a diagnostic test were both 100% when the serum *MYCN*/*NAGK* ratio cutoff was set at 10.0. Among 6 patients in the MNA group whose clinical courses were followed, the serum ratios decreased to within the normal range in the patients in remission ($n = 3$), but they rose to high levels in the patients who had a relapse ($n = 2$) or failed to achieve remission ($n = 1$). The serum *MYCN*/*NAGK* ratio in the MNA group is likely to be the more sensitive tumor marker than conventional urinary vanillylmandelic and homovanillic acid markers and neuron-specific enolase markers to predict patients' clinical course.
CONCLUSIONS: Measurement of the serum *MYCN*/*NAGK* ratio seems to be a promising method for accurately assessing *MYCN* status in neuroblastoma.

RECURRENT IDIOPATHIC THROMBOCYTOPENIC PURPURA IN CHILDHOOD

Submitted by Maria Vranou

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INTRODUCTION: Idiopathic thrombocytopenic purpura (ITP) is usually a benign disease that remits within

weeks to years. The literature on recurrent ITP (rITP) is limited.

OBJECTIVE: The aim of this study was to retrospectively review patients with rITP who were followed up during the period of 1975–2004.

METHODS: We reviewed the outcome of 790 children with rITP

RESULTS: Among 790 children with ITP, 47 (5.2%) presented with >1 episode of thrombocytopenia. The median age of the children at onset of the disease was 55.9 ± 35.3 months and at final remission was 94.4 ± 58.9 months. The majority of patients (76.6%) had 1 recurrence, whereas the rest of them had >1 recurrence (up to 4); the total number of recurrences was 63. The interval between 2 episodes was <6 months in 25% of the episodes, 6 to 12 months in 29%, 12 to 24 months in 24%, 24 to 36 months in 8%, and >3 years in 14%. Almost half the patients demonstrated bleeding manifestations at diagnosis, whereas only a minority (5) showed bleeding symptoms during the first recurrence. Hemorrhages occurred at times of severe thrombocytopenia and were, in general, mild; however, 1 patient suffered intracranial hemorrhage. Of the episodes, 28.6% necessitated hospitalization and 17.5% required therapeutic intervention with corticosteroids or/and intravenous immunoglobulin. The long-term outcome of all patients was excellent, and none of them needed splenectomy.

CONCLUSIONS: rITP occurs mostly in young children, has a good outcome after >1 to 5 episodes, and a median age that ranges from months to years. The course is more often benign; however, life-threatening hemorrhage may occur in a severely thrombocytopenic patient.

SEASONAL AND GENDER DIFFERENCES IN THE PREVALENCE OF INFANT ANEMIA

Submitted by Songul Yalcin

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INTRODUCTION: Anemia is the most prevalent nutritional deficiency in the world.

OBJECTIVE: To estimate the prevalence of anemia among infants receiving routine health care in the Hacettepe University Ihsan Doğramacı Children's Hospital Well Baby Clinic in Ankara, Turkey, we conducted a cross-sectional study by using data from 469 healthy infants who had data available on their hemoglobin values at 6 months of age for the last 3 years.

METHODS: Infants with acute or chronic illness or thalassemia and infants who had taken or were taking iron supplementation at the time were not included in the study. Information regarding the children was obtained from hospital files. Infants with a hemoglobin level of <10.5 and <9.5 g/dL were considered to be mildly and moderately anemic, respectively, at 6 months of age.

RESULTS: The mean level of hemoglobin was 10.7 g/dL (SD: 0.90). The prevalence of anemia was 41.4%. Boys had significantly lower hemoglobin and hematocrit levels and mean corpuscular volume than girls. Infants born before 37 weeks' gestational age had moderate anemia more frequently. Infants born in spring or summer had anemia more frequently than those born in fall or winter (49.2% and 26.8%, respectively; $P < .001$). Birth weight and monthly weight gain from 6 to 9 months were positively correlated with hemoglobin value at 6 months ($r = 0.14$, $P = .003$ and $r = 0.10$, $P = .041$, respectively).

CONCLUSIONS: Anemic infants aged 6 months had an increased risk of developing growth failure from 6 to 9 months. In this study, the prevalence of anemia observed was of severe public health significance and justifies the need to emphasize, in prenatal and infant health programs, intervention measures that consider season of birth for anemia control.

SHOULD THE PELVIS BE INCLUDED IN ABDOMINAL COMPUTED TOMOGRAPHY SCANS OF CHILDREN WITH UPPER-ABDOMINAL PRIMARY MALIGNANT TUMORS?

Submitted by Maria Zarifi

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INTRODUCTION: There is increasing awareness of the potential risk associated with ionizing radiation in pediatric radiology. Children with abdominal cancer undergo multiple computed tomography (CT) scans both at diagnosis and for follow-up.

OBJECTIVE: We sought to estimate the potential contribution of pelvis CT findings in the management of children with upper-abdominal tumors in correlation with the effective radiation dose.

METHODS: Three hundred forty-two children (aged 1 day to 16 years) with histologically proven upper-abdominal primary malignant tumors (children with lymphoma were not included) were examined during the last 15 years in our department. Their upper- and lower-abdominal CT scans were reviewed retrospectively for clinically significant pelvic abnormalities.

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