Introduction:
Lipidemic alterations are commonly seen in pediatric acute lymphoblastic leukemia patients treated with corticosteroids and L-asparaginase. In these children, hypertriglyceridemia rarely causes symptoms and mostly responds well to a low-fat diet. Only few patients demand further therapy, which is not clearly approved in the literature to date.

Methods:
This retrospective study comprises 122 children and adolescents (age >1 year to <18 years) with newly diagnosed ALL at our institution between 12/1999 and 12/2009 (67 male, 55% and 55 female, 45%). Routine blood specimen were drawn after overnight fasting for serum triglycerides and serum cholesterol, glucose, liver and pancreatic enzymes once a week.

Results:
The reviewed collective yielded an incidence of hypertriglyceridemia of 33.6%. On the majority, normalization of triglycerides was successfully managed by administration of a low-fat diet. However, 22% of patients with hypertriglyceridemia did not show diminished lipid levels during diet and/or presented with symptoms such as abdominal pain, dyspnoe or stenocardia. In these cases, we performed a lipid-lowering combination therapy with omega-3 fatty acids and a nicotinic acid derivative (acipimox). We observed a prompt decline of serum triglycerides to normal values and an improvement of symptoms within days after onset of this therapy without occurrence of any side effects.

Conclusion:
In summary, the combination treatment with omega-3 fatty acids and acipimox could represent a capable alternative to other reported lipid-lowering therapies without severe adverse reactions.