

# Hyperphagia- A Rare Clinical Presentation of Acute Lymphoblastic Leukemia Relapse

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**Abstract** Hyperphagia (also referred to as polyphagia) is a serious eating disorder defined as an extreme unsatisfied drive to consume food and the most common sign that a person has hyperphagia is obesity. It can be caused commonly by variety of congenital obesity syndromes and rarely by acquired hypothalamic dysfunction. Here we report a clinical manifestation of a child who was a diagnosed case of acute lymphoblastic leukemia and was on maintenance chemotherapy when parents noted her overeating and on evaluation she proved to have central nervous system relapse.

**Keywords:** hyperphagia, acute lymphoblastic leukemia, relapse

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## 1. Case Report

This child was a diagnosed case of standard risk precursor B-lymphoblastic leukemia 2 years back at age of 18 months and was put on standard risk pediatric BFM chemotherapy protocol. Her treatment remained uneventful throughout induction and child was doing well till last few days of 24 month of her treatment, while she was on maintenance phase of her chemotherapy, when parents noted her unsatisfied drive to consume food. For initial 2 weeks they did not give it a strong consideration but lately at around 1 month of this complaint they got worried and sought a medical attention.

On examination the striking finding was that this child was obese (Figure 1) for her age (anthropometry Table 1 & Figure 2) and rest of the examination was normal.

At this point her haemogram and peripheral blood film examination, bone marrow and coagulogram were normal (Table 2).

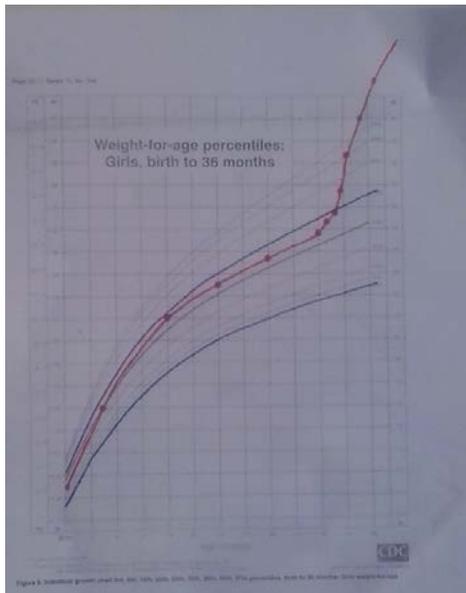
Fundus examination was also normal and CSF examination (Figure 3) was suggestive of CNS relapse. An MRI examination of brain was performed which was essentially normal except for subtle hypointense lesions in thalamic area brain suggestive of leukemic infiltration (Figure 4). This child was immediately advised to go for possible allogenic stem cell transplantation.



Figure 1. showing that the patient is obese with weight for age of 97 percentile as against expected of (3<sup>rd</sup>-75<sup>th</sup>) for her age

Table 1.

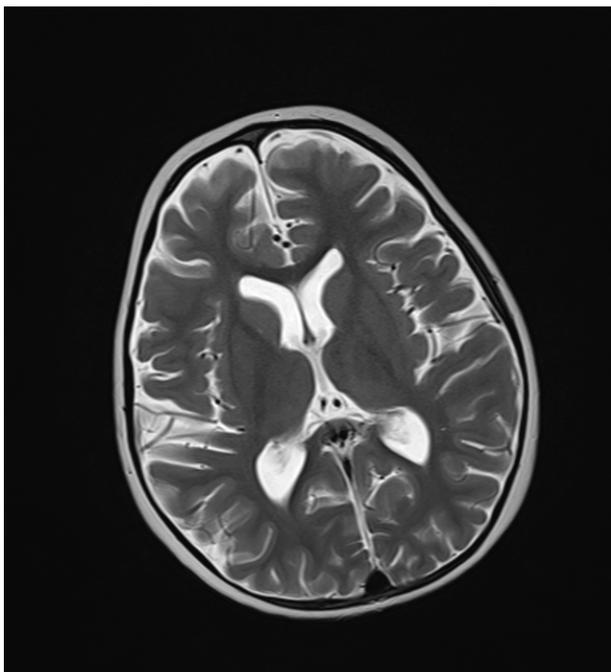
Parameter	Expected percentile	Patient percentile
Wt/Age	3 <sup>rd</sup> -75 <sup>th</sup>	>97



**Figure 2.** showing that the patient is obese with weight for age of 97 percentile as against expected of (3<sup>rd</sup>-75<sup>th</sup>) for her age



**Figure 3.** CSF examination of the patient showing about 80% blasts



**Figure 4.** Magnetic resonance imaging of the patient with subtle hypointense lesions in the thalamic area of brain.

**Table 2.**

Hemoglobin (grams per deciliter)	13.3
Total leucocyte count(per cubic millimeter)	5400
Platelet count(per cubic millimeter)	160,000
Differential leucocyte count	N63L33M4
Peripheral blood smear examination	Normal
Coagulogram	Normal
Bone marrow examination	Cellular marrow with normal hematopoiesis
CSF Examination	TLC-540/uL,DLC: P20,Blasts80,Proteins-88mg/dl,Sugar-45mg/dl.

## 2. Discussion

ALL presumably arises from malignant transformation of B- or T-progenitor cells. [1] The most common cause of treatment failure in childhood ALL remains relapse which is seen in approximately 15-20% of patients. [2] Relapses can be medullary as well as extramedullary. The extramedullary relapses seen in testes, central nervous system and breast are considered as sanctuary sites for disease persistence. [9] Most ALL relapses occur during treatment or within the first 2 years after treatment completion, although relapses have been reported to occur even after 10 years from diagnosis. [3,4] Relapse may represent preexisting drug-resistant clone, novel clone by mutation [5] or quiescent leukemic cell that harbors an otherwise silent fusion gene and that has escaped eradication during initial therapy. [6] With intensive combination chemotherapy and allogeneic hematopoietic stem cell transplantation (HSCT), 30%-50% of all children with relapsed ALL can be cured. [7,8] Thus, most children still die despite aggressive chemo-radiotherapy approaches, including transplantation, and novel salvage regimens are needed.

## 3. Conclusion

Although very rare, clinician treating leukemia should keep an eye on growth pattern of children, for early detection of CNS relapse.

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