

Assessment of growth hormone (GH) – Insulin like growth factor 1 (IGF-I) axis in adults with beta- thalassemia major (BTM): When to do GH stimulation test?

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Introduction

GHD in adults (AGHD) is a clinical syndrome associated with lack of positive well-being, depressed mood, feelings of social isolation, decreased energy, alterations in body composition with reduced bone and muscle mass, diminished exercise performance and cardiac capacity.

These manifestations are also common in adults with BTM. Performing provocative testing in all patients is cumbersome and expensive.

Many studies suggested that IGF-1 may be used for primary screening, to avoid performing GH stimulation tests in the majority of healthy or diseased subjects, when appropriate normative sex and age-correlated ranges are available.

Objectives

The International Network of Clinicians for Endocrinopathies in Thalassemia and Adolescence Medicine (ICET-A) promoted a study to collect more information on IGF-1 values in young adult Italian BTM patients

Patients and Methods

Plasma total IGF-1 was measured by CLIA method for 120 patients with BTM [58 M, 62F] with an age range of 26.0 - 53.2 years for females and 20.8 - 51.2 years for males.

65% of the patients were above 35 years of age. The mean body mass index (BMI) was 22.48 ± 3.34 kg/m².

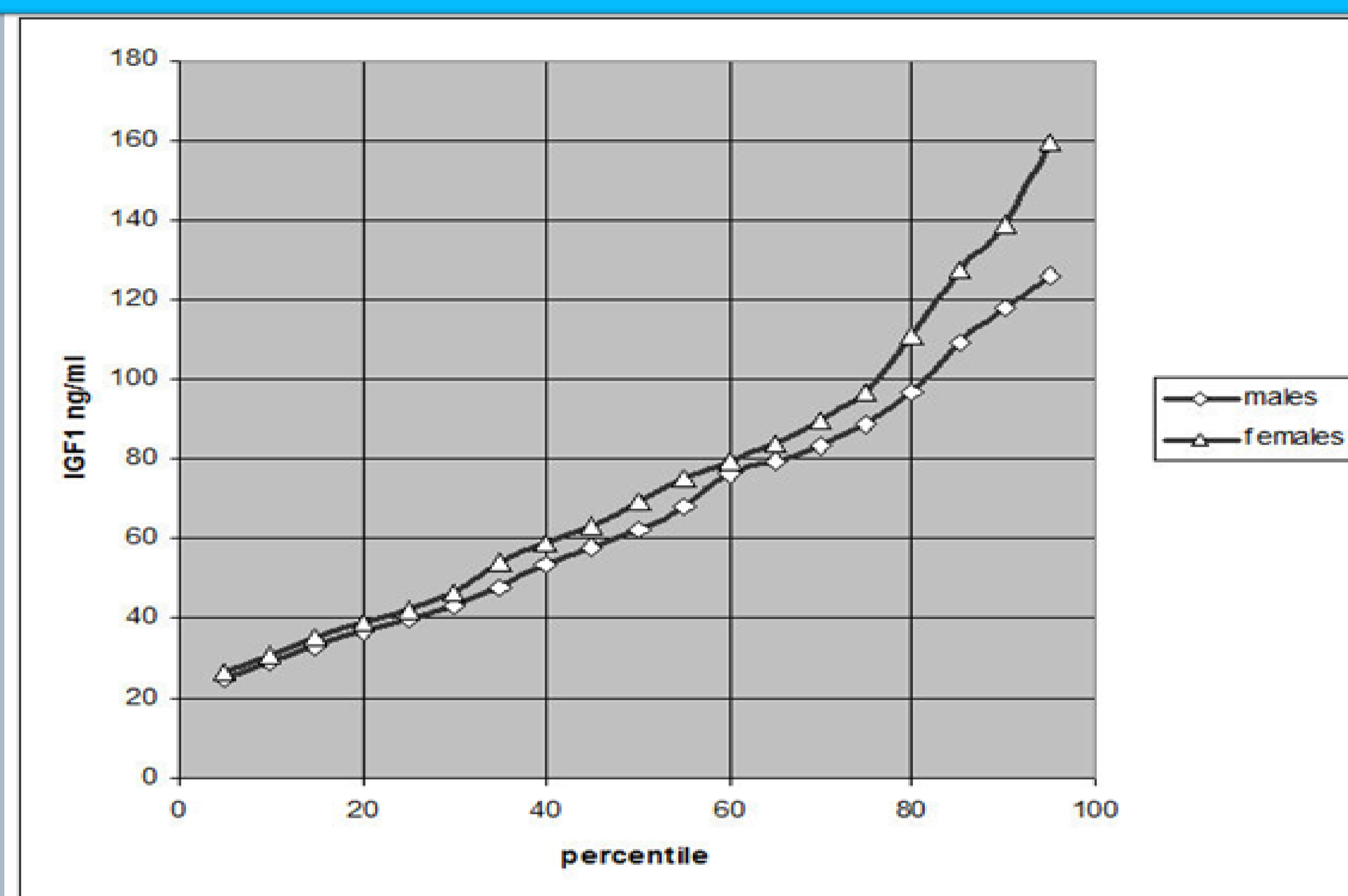
Results

IGF-I data, expressed in percentiles, are reported in figure.

IGF-I levels were significantly higher in adults with thalassemia versus normal IGF-I data for age matched population.

No significant differences were observed between IGF-1 values in men and women with TM.

IGF-I in thalassemic patients versus normal controls



Interpretation and Recommendations

On the basis of the present results and data from the literature, ICET-A concluded their survey with the following recommendations: a GH stimulation test should be indicated in presence of the following clinical and laboratory parameters:

1. short stature (HtSDS <-2.5),
2. severe and/or prolonged iron overload,
3. presence of severe osteoporosis and/or
4. serum IGF-I level < -2SDs.

In adult TM patients, with normal liver function, an IGF-I level < 50th percentile (figure) should be taken in consideration as a cut-off level for the GH assessment.

