

Main discrepancies between predicted and observed growth responses with iGRO in children treated with GH in Spain

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INTRODUCTION

Growth prediction algorithms (i.e. **iGRO**), provide an estimate of a patients' likely growth in the first year, and subsequent years, of GH treatment at a given dose, taking into account the patient's combination of physical characteristics. Comparing a patient's actual growth with their predicted growth after the first year of GH treatment, it is possible to determine whether the patient is responding to GH as expected (Index of responsiveness; IoR) and hence any appropriate action maybe be taken.

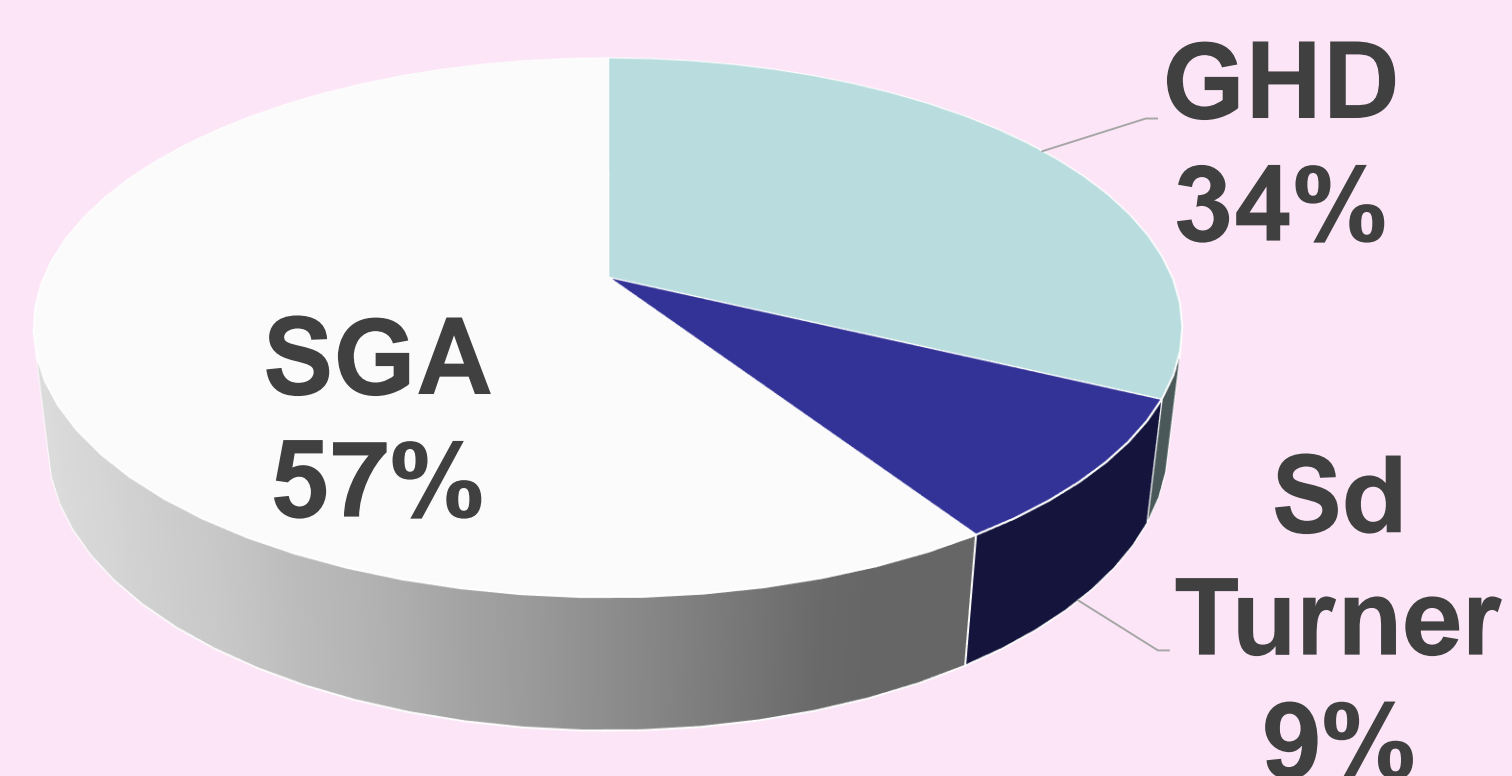
OBJECTIVES

The aim of this study is to analyze the **frequency** and **type of discrepancies** between predicted and observed growth responses with IGRO in children treated with GH in Spain during the first year of treatment.

METHODS

Cross-sectional descriptive study including prepubertal patients (children with growth hormone deficiency (GHD), Turner Syndrome or small for gestational age (SGA) patients) who started GH treatment between 2011 and 2016 and received the treatment during 12 months. (n=100 patients).

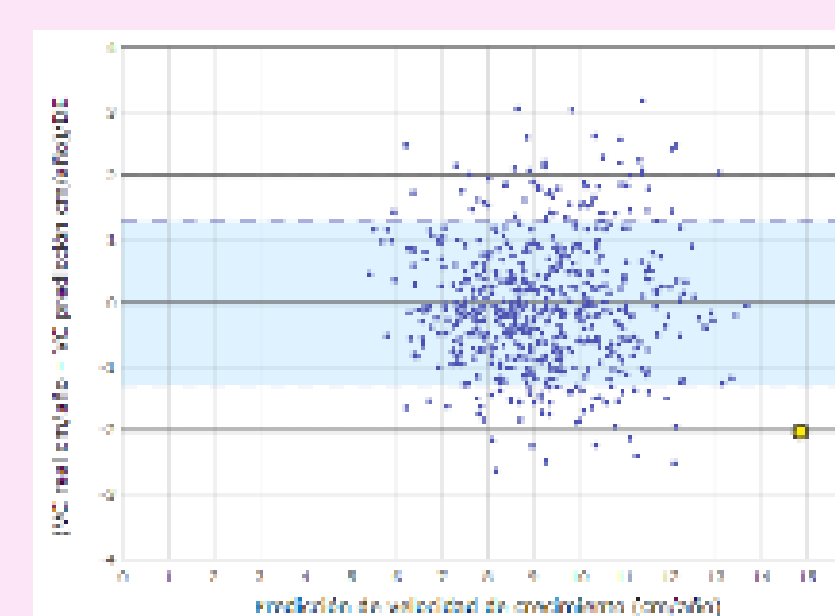
Diseases with GH treatment:



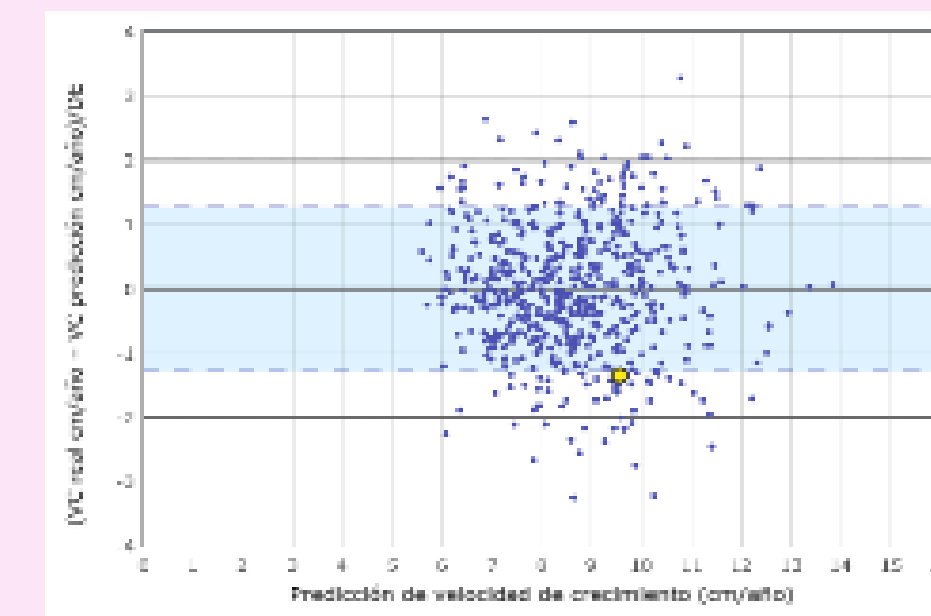
RESULTS

100 patients have been included in the study. 57% were small for gestational age, 34% had GH deficiency and 9% had Turner Syndrome. **86%** of patients had an IoR above -1.28 SDS (ranging between -1.25 to 3.81 SDS), reason why they were considered **good responders** at standard doses of GH.

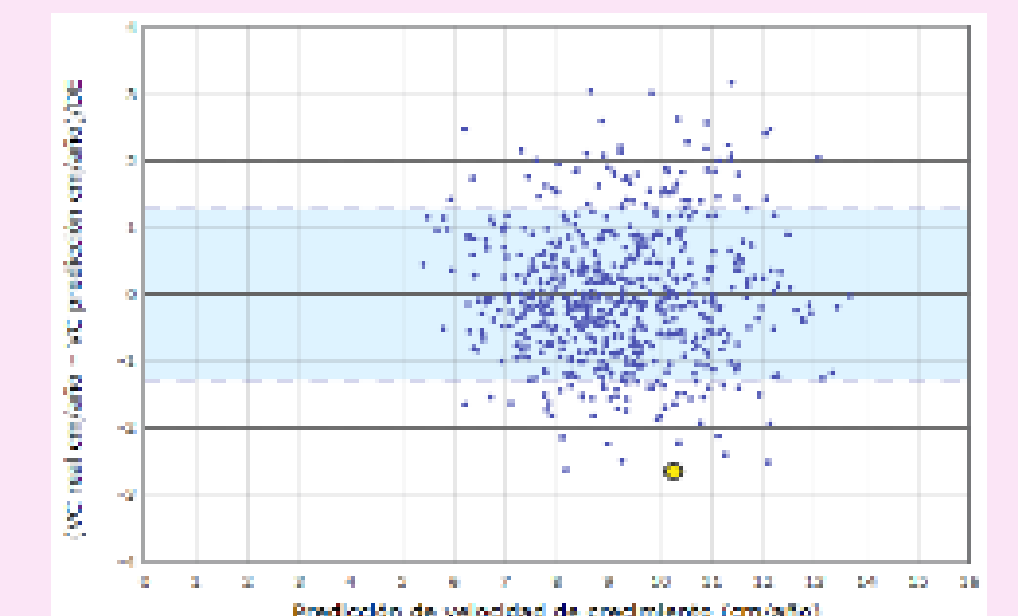
IoR: -2.21 SDS:



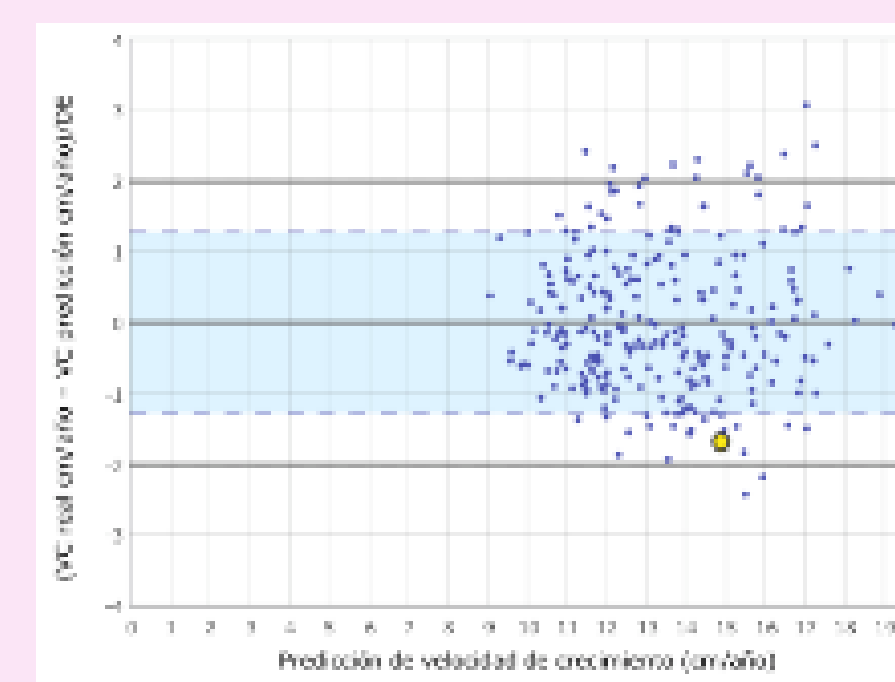
IoR: -1.35 SDS:



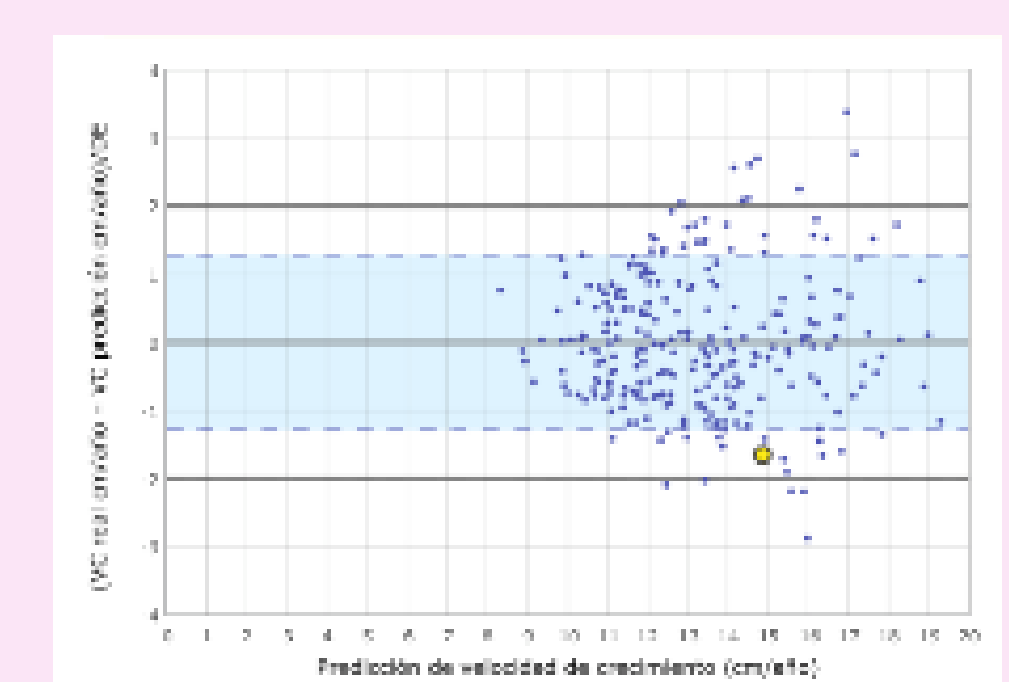
IoR: -2.65 SDS:



IoR: -1.69 SDS:

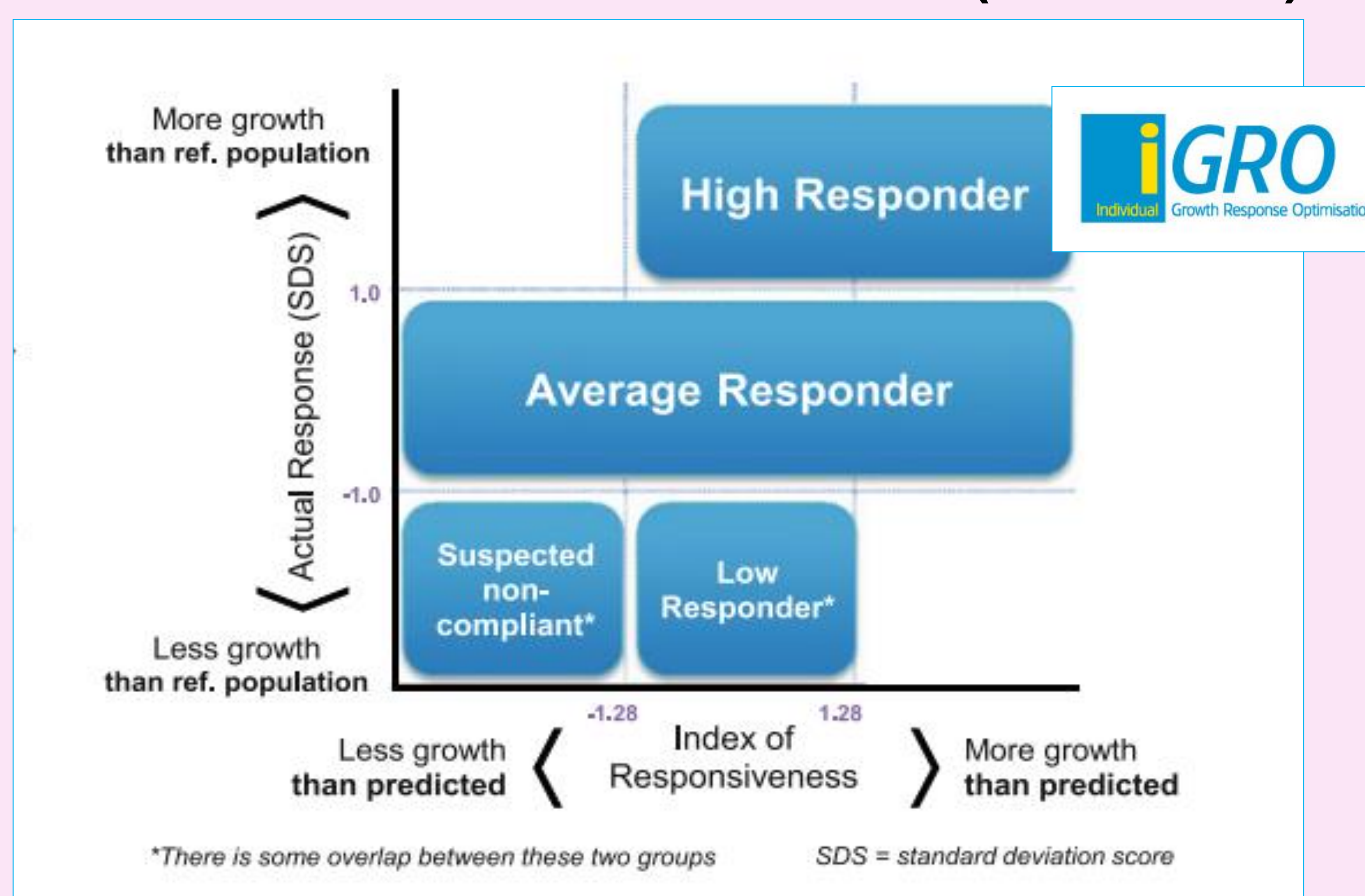


IoR: -1.65 SDS:



- **14 patients** did not respond (IoR range between -4.00 and -1.35 SDS). 85% (12 patients) were compliant (less than a dose missed per week).
- 11 of them had **other concomitant pathologies** (CNS tumor in full remission, Steiner Dystrophy, midline malformation, malnutrition or pituitary hypoplasia associated to other pituitary deficits). One patient had lower dose than required.

EVALUATION OF THE RESPONSE1 (GHD or TS)



CONCLUSIONS

- **Variations in responsiveness to GH** may be influenced by **multiple factors** such as inappropriate diagnosis, the presence of other systemic disorders, lack of compliance with treatment or impaired sensitivity to GH.
- The **discrepancies** between predicted height by iGRO and observed growth after a year of GH treatment **were low in our serie.**

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