



Growth Hormone Therapy in Kuwait: Characteristics and Response in Treated Children

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Introduction

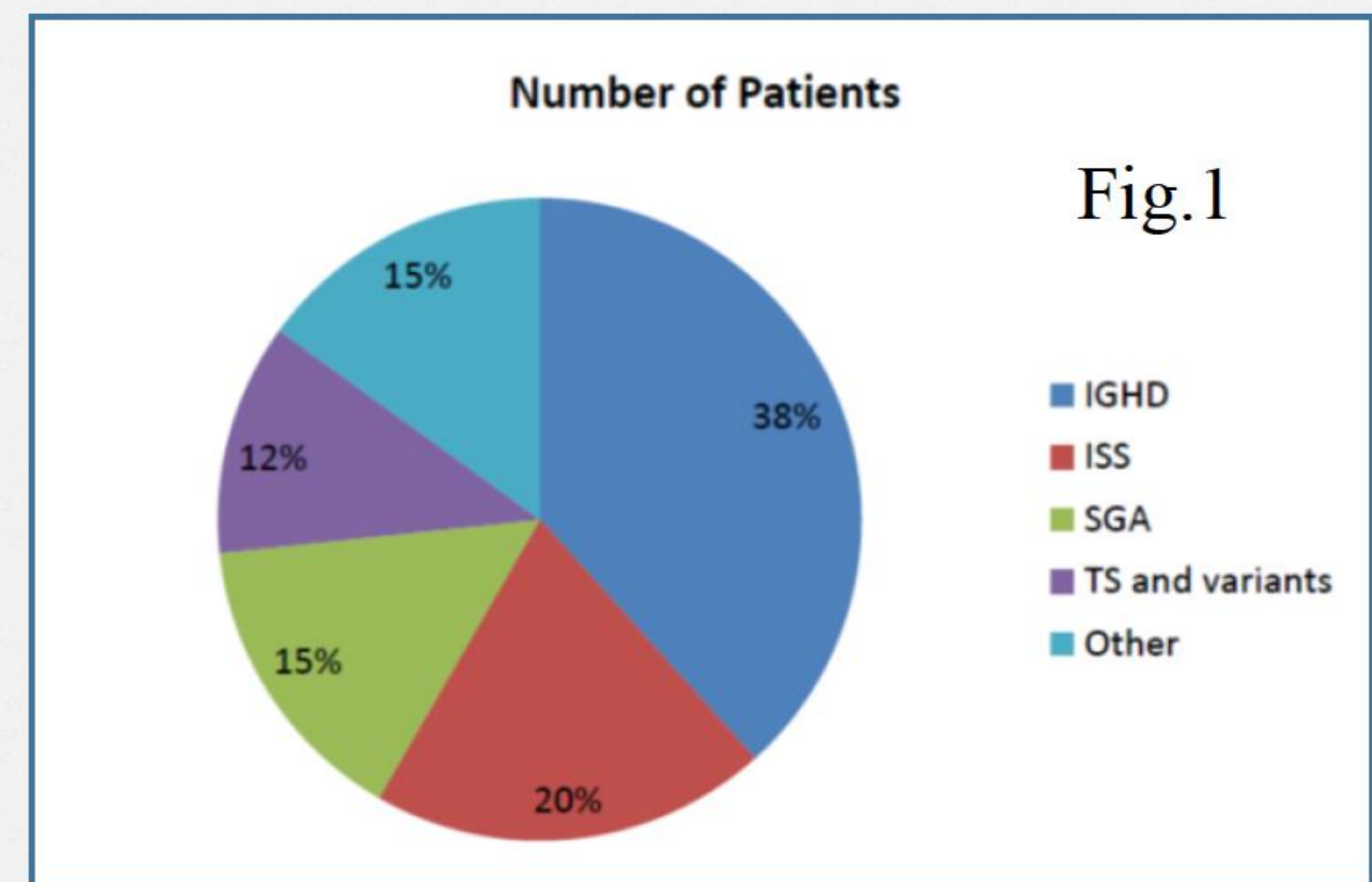
- Recombinant Growth hormone (rGH) therapy is approved in many countries for treatment of short stature in a number of childhood diagnoses.
- Despite the increasing body of literature internationally on rGH use, there are limited data on the use and response rates to rGH therapy in Kuwait or the broader Middle-East which share unique ethnic and socio-cultural backgrounds.
- This study aimed to describe the pattern of use and treatment outcomes of rGH therapy in Kuwait.

Methods

- This is a cross-sectional retrospective review of children treated with rGH in The Department of Pediatrics, in a major hospital in Kuwait between December 2013 and December 2014.
- Data were extracted using data extraction forms.
- The response to rGH therapy was defined as a gain of +0.3 standard deviation score (SDS) of height per year.

Results

- A total of 60 children were treated with rGH in the center.
- Their median (Interquartile) age at rGH initiation was 9.0 (6.2, 10.7) years with no significant gender difference.
- Figure.1 describes the indications of rGH use.
- Table.1 describes the baseline characteristics at initiation of therapy.
- A total of 44 children had completed 1-year of follow-up.
- More than half of the children in all groups had significantly median height SDS change of ≥ 0.3 SDS following the first year of therapy except for children with ISS (less than half had a significant response with a median 1-year change of 0.17 (0.16, .41)).
- Age at rGH initiation was negatively-associated with significant 1-year response, AOR 0.56 (95%CI: 0.04-1.49); p=0.011).



IGHD: Isolated Growth Hormone Deficiency; ISS: Idiopathic Short Stature; SGA: Small for Gestational Age; TS: Turner Syndrome.

Variable	GHD N = 23	ISS N = 12	SGA N = 9	TS and variants N = 7	P value
Female, n (%)	9 (39.1%)	6 (50.0%)	4 (44.4%)	7 (100.0%)	NS*
Age years, median (IQR)	6.4 (5.5, 10.7)	10.6 (8.1, 10.9)	7.8 (7.2, 9.7)	9.9 (5.9, 10.7)	NS
Pre-pubertal, n/N (%)	21/23 (91.3%)	10/12 (83.3%)	9/9 (100.0%)	5/7 (71.4%)	NS
Height SDS, mean (SD)	-2.76 (0.50)	-2.84 (0.52)	-2.49 (0.54)	-2.82 (0.69)	NS
BMI SDS, median (IQR)	-0.32 (-1.25, 0.27)	-0.44 (-1.91, -0.04)	-0.94 (-2.48, -.58)	0.10 (-0.31, 0.65)	NS

Table.1

GHD: Isolated Growth Hormone Deficiency; ISS: Idiopathic Short Stature; SGA: Small for Gestational Age; TS: Turner Syndrome. SD: Standard Deviation; SDS: Standard Deviation Score; BMI: Body Mass Index; * test was done excluding TS. Missing for 1 case (other indications); Missing for 5 cases (2 TS and 3 other indications); Missing for 5 cases (2 TS and 3 other indications).

Conclusion

- GHD is the most common indication of rGH therapy.
- All indications except for ISS showed significant 1-year response to therapy.
- Therapy outcomes in patients with ISS should be further investigated in Kuwait.
- Younger age at initiation of rGH therapy was independently associated with significant response to therapy suggesting the importance of identifying children with short stature and prompt initiation of rGH therapy.



54th Annual Meeting 1-3 October
ESPE 2015 BARCELONA
European Society for Paediatric Endocrinology

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