

Glycaemic control in Children with Type 1 Diabetes in Malta

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OBJECTIVES

For children aged < 16 years with type 1 diabetes mellitus (T1DM) in Malta:

- To determine levels of glycaemic control during 2013 and 2014.
- To calculate the proportion attaining $HbA_{1c} < 7.5\%$ (as recommended by ISPAD).

METHODS

- An estimated 96% of children with T1DM in Malta are seen by the Paediatric Diabetes Team on a regular basis at Mater Dei Hospital.
- MS Excel® was used to collect demographic and clinical data of the patients.
- A point-of-care analyser (Siemens DCA Vantage®) was used to measure HbA_{1c} at each clinic visit, every 3 months; these results were validated by annual laboratory measurements of HbA_{1c} from venous samples.
- The average HbA_{1c} ($\pm 95\%$ CI) of all measurements taken in 2013 and 2014 was used to assess overall glycaemic control.

RESULTS

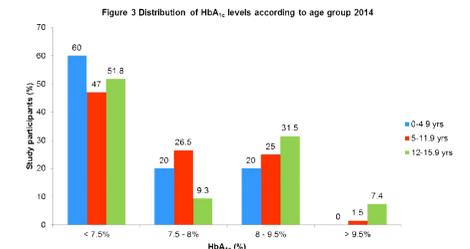
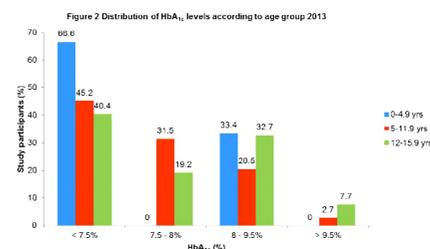
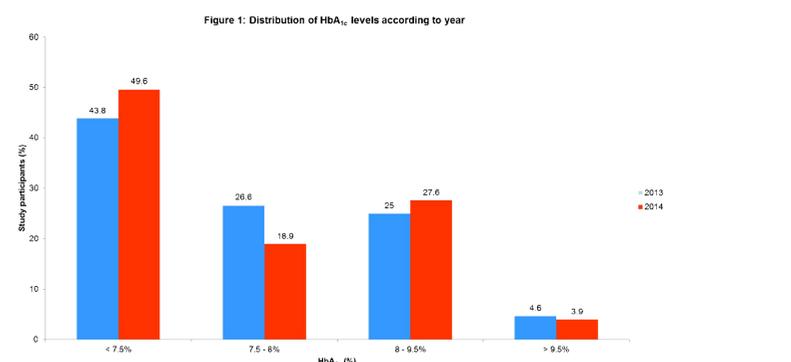
Age (years)	0 - 4.9		5 - 11.9		12 - 15.9		Total	
	2013	2014	2013	2014	2013	2014	2013	2014
Male	1	3	43	40	29	31	73	73
Female	2	2	30	28	23	23	55	53
Total	3	5	73	68	52	54	128	127

Basal bolus regimen (insulin glargine plus mealtime bolus doses of short-acting insulin)	68%
Twice-daily regimen (isophane and soluble insulins)	32%
Continuous subcutaneous insulin infusion (CSII)	Nil (technology not available in Malta)

Year	2013	2014
Mean HbA_{1c} (%) $\pm 95\%$ CI	7.69 \pm 0.16	7.67 \pm 0.17
Boys	7.76 \pm 0.19	7.72 \pm 0.14
Girls	7.59 \pm 0.26	7.60 \pm 0.26
0 - 10.9 years	7.53 \pm 0.16	7.53 \pm 0.32
11 - 15.9 years	7.85 \pm 0.26	7.80 \pm 0.29

Age group (years)	< 13		13 - 15.9	
	2013	2014	2013	2014
Total number of Maltese T1DM patients	85	87	43	40
Proportion achieving $HbA_{1c} < 7.5\%$ in Malta	45%	51.7%	39.5%	45%
USA data (Wood et al 2013)	27%		23%	
Swedish data (Samuëlsson et al 2013)	60%		36%	
TEENS Study	32%		29%	
TEENS Study (European Data)	39.4%		36.5%	

HbA_{1c}	Malta 2013	England / Wales 2012 - 2013 (National Paediatric Diabetes Audit Report)
< 7.5%	43.8%	15.8%
7.5 - 9.5%	51.6%	58.4%
> 9.5%	4.6%	25.8%
Mean HbA_{1c}	7.69%	8.8%



CONCLUSIONS

- Glycaemic control achieved in Malta in children aged < 16 years with T1DM was stable over the two years analysed.
- A higher proportion of patients in the younger age-group achieved an HbA_{1c} target of < 7.5%. The patients most likely to have a higher HbA_{1c} were in the older age-group.
- Our data is comparable, or slightly better, to that achieved in other European countries and the United States of America.
- There is always room for improvement, as the Swedish data has shown.
- Multidisciplinary team meetings could be one way to address those patients not achieving ideal HbA_{1c} results.

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