Psychosocial risk and insulin pump therapy in children with Type 1 Diabetes in Ireland

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BACKGROUND

Psychosocial factors may be essential in explaining poor glycaemic control in children with Type 1 diabetes (T1D).

OBJECTIVES

- To examine the psychosocial risk and the risk for emotional distress in children with T1D.
- Compare the psychosocial risk and the risk for emotional distress in children on continuous subcutaneous insulin infusion (CSII) and multiple daily injections (MDI).

METHODS

- A cohort study including 102 children with T1D was undertaken
- Demographic and clinical data were collected from children, parents and clinical notes
- A psychosocial risk assessment included:

➢ **Risk index for poor glycaemic control** (RI-PGC) a broad assessment of psychosocial risk (this includes two subscales: psychological and socio-economic)

Cut-off scores of Risk for poor glycaemic control [2]

Low risk 0-1
Moderate risk =2
High risk >2

➢ **Paediatric Index of Emotional Distress** (PI-ED) a specific assessment of psychological/emotional risk factors [3]
Contains 14 items relating to symptoms of anxiety and depression in children and adolescents

Score >20 indicates high risk for Emotional distress (ED)

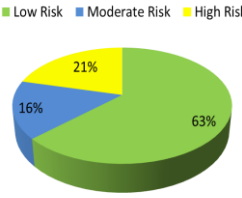
RESULTS

Table 1. Demographics

	%, n	HbA1c, mmol/mol± SD	Poor glycaemic control (>75), %, n
Total sample	100%, 103	65.9 ±11.2	18.4%, 19
Male	51.4%, 53	64.9 ±10.7	16%, 8
Age, years	12.3±3.4		
Children	40.8%, 42	63.8±8	7.1%, 3
Adolescents	59.2%, 61	67.4±12.8	26.2%, 16 **(p<0.05)**
Age at DM onset, years	7.3±3.6	66.5±10.7	18.5%, 17

RESULTS

Figure 1: Percentage of patients with low, moderate & high risk on RI-PGC



37% of children were at moderate or high risk for poor glycaemic control (figure 1)

Table 2. RIPGC: low, moderate and high risk

	Low Risk (score 0-1)	Moderate Risk (=2)	High Risk (≥3)
%, n	63.5%, 61	15.6%, 15	20.8%, 20
Male	57.4%, 35	33.3%, 5	45%, 9
Age, years	11.9±3.3	13.4±2.6	11.8±3.6
Children	45.9%	13.3%	50%
Adolescents	54.1%	86.7% **p<0.05**	50% **p<0.05**
Duration, years	4.9±3.1	5.5±3.6	5.3±3.8
Age at onset, years	7±3.5	7.8±3.6	6.4±3.2
HbA1c, mmol/mol	65 ±10.6	67.9 ±12.4	66.2 ±11.9
CSII	72.4%	13.8%	13.8%
MDI	59.1%	16.7%	24.2%

Table 3. PIED: low and high risk

	Low risk for ED	High risk for ED
%	91.3% (84)	**8.7% (8)**
Female	46.4% (39)	87.5% (7)
Age, years	13±2.5	13.4±3.3
Children	33.3% (28)	37.5 (3)
Adolescents	66.7% (56)	62.5% (5)
Duration, years	5.3±3.2	5.4±4.1
Age at onset, years	7.7±3.6	8±3.7
HbA1c, mmol/mol	65.6±11.8	71.1±10.4
CSII	91,7%	8.3%
MDI	91%	9%

Association RIPGC and PIED

➢ There was a significant correlation between higher RI-PGC scores and higher PI-ED scores **(p<0.002)**

RESULTS

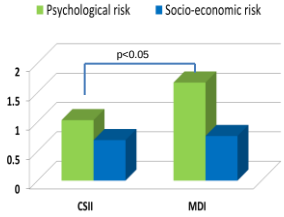
CSII patients

- N=30 (30%)
- Mean age 11.5±4
- Mean duration of T1D 5.3±3.3
- Mean HbA1c 64.1±9.6

➢ The mean score on the 'Psychological subscale of RIPGC' reported a lower risk in CSII patients compare to patients on MDI (p<0.05) (figure 2).

➢ The mean score on the 'Socio-economic sub-scale of RIPGC ' were slightly lower in patients on CSII versus MDI, but this did not reach statistical significance.

Figure 2: The mean score on psychological and socio-economic subscale of RIPGC in patients CSII and MDI patients



CONCLUSIONS

➢ **21%** of patients were at **High risk for poor glycaemic control**; 37% - High and Moderate risk.

➢ **9%** of patients were at **high risk for emotional distress**, most of them were female. High psychosocial risk is associated with emotional distress.

➢ CSII vs MDI:
- **Children on CSII were at lower** risk for poor control, when assessed using psychological subscale
- There is no significant difference in risk for poor control on socio-economic subscale.

➢ Psycho-social screening can aid the Paediatric Diabetes Team in appropriate care pathways.

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