Circumstances Around Pediatric and Teenager's Diabetic in The South of Iraq

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الخلاصة

تم التخطيط لهذه الدراسة لتقدير الظروف المحيطة لانتشار مرض السكري في الأطفال والمراهقين، وأقل 18 خلال فترة (أكتوبر 2012 – مايو 2013) في مدينة الناصرية، وفقا للسن والجنس والمنطقة، بداية المرض، عدد الأزمات، عوامل الخطر الجينية، ومستوى اقتصادي للأسرة، المظاهر السريرية، مكونات الدم.

المواد وطرق العمل: (100) من الأطفال والمراهقين، وتتراوح أعمارهم ما بين (1–18) سنة، من الذكور والإناث تم تشخيصهم سابقا وكانوا مصابين بمرض السكري نوع الأول (DM-1) بما لا يقل عن (3) أشهر.

النتائج: في هذه الدراسة تم استنتاج ان مرض السكري يؤثر بنسبة (34%) من عمر 1 يوم الى 1 سنة، و(44%) من المرضى في سن (1-5) سنوات و (69%) من المرضى تكون أسرهم لديها مستوى اقتصادي معتدل والغالبية العظمى من العينات بنسبة (53%) لم يتعرضوا الى الأزمات. أظهرت غالبية العينات بنسبة (68%) غير مرتبطة بعوامل جينية.

الكلمات المفتاحية

داء السكري، مرض السكري من النوع الأول (DM-1)، الأطفال والمراهقون.

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Abstract

The aim of This study was planned to estimate the conditions surround the prevalence of diabetes mellitus in children and adolescents, less than18 years of age throughout the period of (October 2012 - May 2013) in the Nasiriya city.

Materials and methods: (100) children and adolescents, the ages range between (1-18) years, male and female previously diagnosed for at least (3) months with Type 1 diabetes (DM-1), according to age, gender, area, onset of disease, crises number, genetic risk factors, family economical level, clinical features, blood parameters were included in the study.

The results: In the present study, diabetes mellitus affects(34%) at age of 1 day to 1 year, and(44%_ of the patients at the age of (1-5) years and(69%) of family's patients have a mild economical level, and the majority of samples that didn't found crisis(53%). Showed the majority of the samples non genetic related risk factors(68%).

Keywords

Diabetes Mellitus, Type 1 diabetes (DM-1), Children and Adolescents.

1. Introduction

Diabetes Mellitus-1 is widely understood to be caused by an autoimmune process that destroys the insulin-secreting beta-cells in the pancreatic islets [1]. While it is accepted that genetic factors play a key role in its development, environmental and nutritional factors are believed to be modifiers [2-4], as only ~(5%) or fewer subjects with genetic susceptibility to Diabetes Mellitus-1 develop the clinical disease [5]. In Australian children, Diabetes Mellitus-1 incidence increased significantly between 2000-2004, from 19 to 24 new cases per 100,000 of the children's population [6], a trend that is reflected globally [7]. There are a major regional and between-country differences in the incidence of Diabetes Mellitus-1 [8], and even between high income OECD (Organization for economic cooperation and development) countries the incidence varies by a factor of more than (2) [9].

In the 19th century, diabetes was uncommon and the incidence of childhood diabetes was relatively low and Table until the middle of the twentieth century. There has been an upturn in the incidence of Diabetes Mellitus-1. The rise has been too rapid for the explanation to be purely genetic. The causes are not yet completely understood, although various factors have been proposed such as rapid growth in early childhood, early exposure to certain food constituents (e.g. Cow's milk hypothesis), enter virus infection, chemicals and reduced exposure in early childhood to infective agents that contribute to the development of a healthy immune system (the 'hygiene hypothesis') [10]. Diabetes Atlas, fifth edition: www.diabetesatlas.orgNote: These figures are based on what countries report, and the figures will depend on screening strategies. Although numerous studies have documented worldwide increases in diabetes, [11]. Few data exist on the population prevalence of diabetes among ways to estimate the conditions surround the prevalence of diabetes mellitus in children and adolescents in Iraq. Early exposure to dairy proteins increases the in- cadence of diabetes in BB rats (2). Controversy exists over the possible protective effect of breast- feeding on the risk of insulin-dependent diabetes mellitus (IDDM) in humans [3,4]. The incidence of childhood IDDM in Finland is the highest in the world [5]. There for we were deciding to do this study, which aimed to estimate the conditions surround the prevalence of diabetes mellitus in children and adolescents, less than18 years of age throughout limited period.

2. Materials and methods:

A descriptive study (cross-sectional design) was conducted in (2) observational centre Bint al-Huda educational hospital and Diabetic and Endocrine glands centre in Nasiriya city. Non –Probability (purposive) sample of (100) children and adolescents, the ages range between (1-18) years, male and female previously diagnosed for at least (3) months with DM-1. They visited the diabetic centre for check –up and get their medicine. The data are collected

through the use of semi-constructed questionnaire, which consists of 17-items medical test items. Reliability of the questionnaire is determined through a pilot study and the validity through a panel of (18) experts. The data were described statistically and analysed through the use of the descriptive and inferential statistical analysis procedures (SPSS).

3. The results:

The findings of the present study indicate that the diabetes mellitus affects (34%) at age of (1) day to (1) year, and (44%) of the patients at the age of (1-5) years that's mean (78%) of our study's sample are children under than 5 years old Table (1). Our study showed that the most samples (69%) of family's patients have a mild economical level, and the majority of samples that didn't found crisis (53%)

Also this study showed the majority of the samples non genetic related risk factors (68%). The results showed the higher range of the patient's fasting blood sugar (200-349) mg/dl were (47%) of the patient sample, and the majority of patient's random blood sugar were (48.7%) in the range (200–349) mg /dl. The blood urea was (43%) of selected patients in the range (20–24) mg/dl urea. And our results showed the majority of the patient's (98%) serum creatinine were in the range (0.6 –3) (mg/ l, but the cholesterol is (63%) of the patients in the range (125 – 174) mg/dl.

Table (1): Date of the onset of disease

Date of the onset of disease	Patient's number	% Percentage
Day – year	34	% 34
Year – 5year	44	44%
5year – 10 year	20	20%
10year – 12year	2	2%

Table (2): Descriptive Statistics for the Practice items of Juveniles who effected by DM-1 (MS) Mean of Score, (SD) Standard Deviation, and (RS) Relative Sufficiency of the Diabetes Mellitus Diseases

The practices of Juveniles who affected by diabetes (Type 1)		.No	.M.S	.S.D	.R.S	.Ass
3	Reaction of adolescent care of singe and Symptoms					
3-1-1	Body energy	100	1.18	0.52	39.33	F

3-1-2	Prevent hypoglycaemia	100	2.12	0.86	70.67	P
3-1-3	Fruits and leafy vegetables	100	1.72	0.82	57.33	F
3-1-4	Amount of fluid	100	1.21	0.56	40.33	F
3-2	Dental Care					
3-2-1	Oral hygiene	100	1.45	0.69	48.33	F
3-2-2	Teeth and gum infected	100	1.13	0.37	37.67	F
3-2-3	Examine my teeth	100	1.33	3.01	44.33	F
3-3	Injection method					
3-3-1	Store	100	2.37	0.88	79.00	P
3-3-2	Dose	100	2.30	0.92	76.67	P
3-3-3	Check up the vial	100	1.10	0.36	36.67	F
3-3-4	Hand clean	100	1.17	0.49	39.00	F
3-3-5	Shake the vial	100	1.89	0.93	63.00	F
3-3-6	Sterilization	100	1.54	0.82	51.33	F
3-3-7	Avoid the inflammation	100	1.20	0.57	40.00	F
3-3-8	Injection places sterilization	100	1.38	0.74	46.00	F
3-3-9	Air bubbles	100	2.39	0.87	79.67	P
3-3-10	Amount of insulin	100	2.38	0.90	79.33	P
3-3-11	Grasp	100	1.19	0.53	39.67	F
3-3-12	Angle	100	1.38	0.75	46.00	F
3-3-13	Syringe units	100	2.20	0.94	73.33	P

Table (2): Container

The practices of Juveniles who affected by diabetes (Type 1)		.No	.M.S	.S.D	.R.S	.Ass
3-3-14	Pressure on skin after injection	100	1.12	0.41	37.33	F
3-3-15	Measurement glucose	100	1.39	0.68	46.33	F
3-3-16	Change the injection	100	1.24	0.59	41.33	F
3-4	Foot care					
3-4-1	Skin cleanness	100	1.16	0.49	38.67	F

3-4-2	Examine my feet	100	1.24	0.61	41.33	F
3-4-3	Family	100	1.72	0.89	57.33	F
3-4-4	Feet hygiene	100	1.20	0.59	40.00	F
3-4-5	Change socks	100	1.15	0.46	38.33	F
3-4-6	Shoes	100	1.31	0.61	43.67	F
3-4-7	Warm water	100	1.55	0.83	51.67	F
3-4-8	Nails	100	1.12	0.38	37.33	F
3-4-9	Rub	100	1.21	0.56	40.33	F
3-4-10	Skin ointment	100	1.27	0.65	42.33	F
3-4-11	Walking	100	1.17	0.51	39.00	F
3-4-12	Hot is exposed	100	1.28	0.59	42.67	F
3-4-13	Washing with hot or cold water	100	1.20	0.43	40.00	F

Table (3): Showed the number of families.

Number of family	Patient's number	Percentage %
5 - 3	15	% 15
10 – 6	61	61%
15 - 11	17	17%
20 – 16	7	7%

Table (4): Frequency of family economical level.

Family economical level	Patient's number	Percentage %
Good	19	19%
Mild	69	69%
Poor	12	12%

Table (5): Frequency of fund of crisis.

Found of crisis	Patient's number	Percentage
Crisis	47	47%
No crisis	53	53%

Table (6): Show the frequency of clinical features.

Clinical features	Patient's number	Percentage
Weight loss	46	46%
Polyphagia	61	61%
Polyurea	89	89%
Polydepsia	78	78%
Blurred vision	42	42%

Table (7): Frequency of the area.

Area	Patient's number	Percentage%
Urban	56	56%
Ruler	44	44%

Table (8): Frequency of gender.

Sex	Patient's number	Percentage%
Male	55	55%
Female	45%	45%

Table (9): Frequency of genetic risk factors.

Causes	Patient's number	Percentage
Genetic	32	32%
Non genetic	68	68%

Table (10): Frequency of weight risk factors.

Weight	Patient's number	Percentage%
Thin	46	46%
Normal	43	43%
Overweight	11	11%

Table (11): Frequency of education, level of the mother.

Education level of mother	Patient's number	Percentage%
Illiterate	23	23%
Read and write	14	14%
Primary school	26	26%
Secondary school	20	20%
Diploma	9	9%
Bachelors	8	8%

Table (12): Frequency of patient's fasting blood sugar.

Fasting blood sugar mg/dl	Patient's number	Percentage
50 – 99	8	12.12%
100 – 149	10	15.15%
150 – 199	7	10.6%
200 – 249	7	10.6%
250 – 299	12	18.18%
300 –349	12	18.18%
350 – 400	6	9%
More than 400	4	6%

Table (13): Patient's random blood sugar test.

Random blood sugar	Patient's number	Percentage
100 – 149	5	14.8%
150 – 199	5	14.7%
200 – 249	9	26.4%
250 – 299	2	7.8%
300 – 349	8	14.5%
350 – 400	2	13.8%
More than 400	3	8.82%
Total	34	100%

Table (14): Frequency of patient's random blood urea.

Blood urea mg/dl	Patient's number	Percentage
20 – 24	43	67%
25 – 29	34	53%
30 – 34	22	29%
More than 35	1	1%
Total	100	100%

Table (15): Frequency of the patient's serum creatinine.

Serum creatinine	Patient's number	Percentage
0.6 – 3	98	98%
More than 3	2	2%
Total	100	100%

Table (16): Frequency of patient's serum cholesterol.

Serum cholesterol	Patient's number	Percentage
95 – 124	25	25%
125 – 174	63	63%
175 – 200	11	12%
Total	100	100%

4. Discussion:

Our study a descriptive (cross-sectional design) was conducted in (2) observational centre Bint al-Huda educational hospital and Diabetic and Endocrine glands centre in Nasiriya city, and this study started from October 2012 to April 2013 and included the ages of the patients (1-18) years. The results revealed that the majority of samples from school age in which there is no super advice and because as showed by the results the low educational level of the patients' mothers or family, so the uncontrolled nutritional system by the children represented by the increase amount of candy intake lead to hyperglycaemia and may be overweight. Table (1) showed the sudden onset or susceptible age affected by diabetes in children are from (year to 5 years) represented *(*44%*)* of the patients.

This result agrees with the study of [12] which referred to the incidence of DM-1 is increasing in children and youth by about (3%) (range about 2–5%) per annum, with the greatest rate of rise in the under 4-yr-old age group [12]. Our results also supported by a prospective data collection in Kuwait between 1992 and 1997 showed an incidence in children under the age (5) years rising dramatically to (20.9) per (100 000) (5) years later. The rise was particularly steep in those aged (5–9) years [13]. In Table (2) there are no any significant differences between the mothers age categories. There is an enormous gap between knowledge and practice of optimal diabetes care, and a major factor in this gap is lack of care organization and the disease knowledge. Regarding to the family members' number (6-10) is a higher than other number's categories and the majority of the patient's family have a mild economical level as described in forms and Tables (4). The increase of diabetes is closely related to socioeconomic and environmental factors together with a genetic influence. There was a 10-fold difference between the different countries, with higher rates in the diabetes, and those from low incidence countries, as well as those from families of a lower socioeconomic status [22]. The described changing patterns of pre-sanitation of diabetes have also changed the incidence and severity of DKA in children [21]. Although

more than)85%(of DM-1 occur in individuals with no previous first degree family history, the risk among first degree relatives is about 15 times higher than in the general population. About the crisis, the statistical Table (5), showed the patients did not have crisis were higher than the patient has a crisis. The development of complications is related to the duration of diabetes, and youth with diabetes represent a population at high risk for developing these complications. Indeed, persons diagnosed with diabetes before (20) years of age have a markedly lower life expectancy than the general population without diabetes [23]· According to the area, the statistical Table (8), so the majority of patient were urban According to the gender, the statistical Table (9) shows the male sex was higher than female sex. Between 10- to 19-year-old youth, we found a higher prevalence among female youth (compared with male youth) in (3) of the (5) racial/ethnic groups (black, API, and AI). A study found an excess prevalence of female youth among black youth, but not among NHW youth [19]. Regarding to the genetic risk factor, the statistical Table (10), showed the patients did not have genetic risk factor were higher than genetic risk factor as only ~(5%) or fewer subjects with genetic susceptibility to DM-1 develop the clinical disease [5]. According to the weight risk factor the statistical Table (11), showed the thin patient riskier than other weights. Although children with type 1diabetes are typically not overweight, the population of many countries is becoming more overweight. It is estimated that as many as a quarter of children with DM-1 in these countries may be overweight at the time of diagnosis [15].

Regarding the investigations in the Table (13), there is an increase in threading of fasting blood sugar in the range (250-299) mg\dl were 12 patients (18.18%) of the total number of patients (66), that's who made fasting blood sugar test and range (300-349) mg\dl so on. Patients who made random blood sugar they were (n=34) patients. Most read recurrent from (200-249) mg\dl in Table (14). And other investigation, routinely made for diabetic patient, such as blood urea there is increasing over the normal range. Most recurrent reading was at the range (20-24) mg\dl and (p=67%) in the Table (15). At the serum creatinine more patient's serum creatinine was *(*98%*)* of the range (0.6-3) mg\dl in Table (16). And serum cholesterol greater reading was at the range (125-174) mg\dl were (n=63), (p=63%). We conclude with these results the age of patients, age of the patient's mother, number of family, economical level of family and education level of the mother was effected to the onset of disease.

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