

Dedication

To my mother.....

To my father.....

**To my
brothers.....**

**To my
sisters.....**

**To my
friends.....**

**And
my colleagues...**

**I dedicate this work with my best
wishes to all.**

Acknowledgements

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Abstract

The aim of this study was to determine the seroprevalence of celiac disease (CD) among type 1 diabetic children.

Across sectional hospital based study was carried out in integrated management of diabetic children at Wad medani paediatric teaching hospital. From October 2008 to February 2009, 145 patients with type 1 diabetes, 66 males (aged 3 to 19 years) and 79 females (aged 5 to 19 years), were screened for CD using anti-tissue transglutaminase antibody (t-TGA) determined by ELISA. Clinical data, hemoglobin Alc, insulin requirements were evaluated.

Nine (6.2%) patients were positive for (t-TGA) giving a prevalence of CD in diabetic children of 2.9%.

The prevalence of CD was found higher than expected. The females were more affected by CD than males. Serologic markers for CD are useful for identifying asymptomatic type 1 diabetes children who should undergo intestinal biopsy.

هدفت هذه الدراسة الى تحديد إنتشار الداء البطانى (celiac disease) لدى الأطفال المصابين بداء السكر من النوع 1.

إجريت هذه الدراسة المقطعية المستشفوية المرتكز، فى مشروع العلاج المتكامل لمرضى السكر عند الأطفال، بمستشفى ود مدنى التعليمى للأطفال. تم المسح للداء البطانى على 145 مريض بداء السكر من النوع 1، 66 ذكر تتراوح أعمارهم من 3 إلى 19 سنة، و 79 أنثى تتراوح أعمارهن من 5 إلى 19 سنة فى الفترة ما بين أكتوبر 2008 الى فبراير 2009 بواسطة المقيسة المناعية الأنزيمية (ELISA) بإستخدام الجسم المضاد المعادية لـ (t-TGA transglutaminase).

تم تقييم البيانات السريرية، هيموغلوبين Alc ومتطلبات الأنسولين للمرضى. فقد وضح من الدراسة أن تسعة (6.2%) مرضى كانوا إيجابيون لـ (t-TGA) يمثلون إنتشار الداء البطانى فى الأطفال المرضى بالسكر بنسبة إنتشار 2.9%.

إنتشار الداء البطانى وُجِدَ بنسبة أعلي من المتوقع. الإناث كُنَّ أكثر تأثراً بالداء البطانى من الذكور. العلامات السرولوجية للداء البطانى مفيد لتَمييز الأطفال المصابين بداء السكر الذين لا تظهر عليهم الأعراض، ويخضعون لإجراء خزعات معوية.

List of Contents

Contents.....	page
Dedication.....	I
Acknowledgments.....	II
Abstract.....	III
مستخلص الدراسة.....	IV
List of Contents.....	V
List of Tables.....	IX
List of Figures.....	X
List of Abbreviations.....	XI

Chapter One

1. Introduction and Literature review.....	1
1.1. Definitions.....	1
1.1.1. Celiac disease (CD).....	1
1.1.2. Diabetes mellitus (DM).....	1
1.1.3. Type 1 diabetes mellitus (T1DM).....	1
1.1.4. Type 2 diabetes mellitus (T2DM).....	2
1.2. Historical Background.....	4
1.3. Epidemiology.....	5
1.3.1. General.....	5
1.3.2. Gender distribution.....	6
1.3.3. Age distribution.....	6
1.3.4. Prevalence of CD in Patients with Type I Diabetes.....	7
1.3.5. Incidence of celiac disease.....	8

1.3.6. Screening for CD.....	9
1.3.7. Association of celiac disease with type 1 diabetes mellitus.....	10
1.3.8. Geographical distribution.....	11
1.3.8.1. Celiac disease in Arab and African countries.....	12
1.3.8.2. Celiac disease in Sudan.....	14
1.4. Pathophysiology and Pathogenesis	15
1.4.1. General.....	15
1.4.2. Hypotheses for pathogenesis.....	18
1.4.3. Genetics.....	20
1.5. Clinical presentation.....	22
1.5.1. Symptoms.....	22
1.5.2. Other presentation of CD.....	24
1.5.2.1. Silent CD.....	24
1.5.2.2. Latent CD.....	24
1.6. Diagnosis.....	25
1.6.1. Diagnostic criteria.....	25
1.6.2. Serological tests.....	25
1.6.3. Biochemical and haematological findings.....	28
1.6.4. Radiological studies.....	29
1.6.5. Biopsy of the small intestine.....	29
1.7. Management.....	29
1.7.1. Gluten-Free diet.....	29
1.7.2. Steroids.....	30
1.7.3. Genetic engineering.....	30
1.8. Prognosis and complications.....	31
1.8.1. Prognosis.....	31
1.8.2. Complications.....	31

1.8.2.1. General.....	31
1.8.2.2. Malignancy.....	31
1.8.2.3. Osteoporosis.....	31
1.8.2.4. Neurological complications.....	31
1.9. Associated problems.....	32
1.9.1. General.....	32
1.9.2. Type 1 insulin dependent diabetes mellitus (IDDM).....	32
1.9.3. IgA deficiency.....	32
1.9.4. Dermatitis Herpetiformis (DH).....	32
1.9.5. Liver disease.....	33
1.9.6. Down's syndrome.....	33
1.9.7. Turner syndrome.....	33
1.9.8. Auto immune thyroid disease.....	33
Rationale.....	34
Objectives.....	34
Chapter Two	
2. Materials and Methods.....	35
2.1. Subjects	35
2.2. Methods.....	35
2.2.1. Medical history and physical examination	35
2.2.2. Samples collection.....	36
2.3. Materials.....	37
2.3.1. Reagents.....	37
2.3.1.1. Kit contents of AESKULISA tTg-A (REF7503).....	37
2.3.1.2. Reagents for HbA1c measurement.....	38
2.4. Methodology.....	38
2.4.1. Anti-tissue transglutaminase IgA antibodies (anti-tTG-A).....	38

2.4.2. Method for HbA1c measurement.....	40
2.5. Tools of data collection.....	41
2.6. Data entry and statistical methods.....	41
Chapter Three	
3. Results.....	42
3.1. Prevalence of celiac disease among type 1 diabetic children.....	42
3.2. Clinical and laboratory investigations of CD diabetic children.....	43
3.3. Clinical signs and symptoms of CD diabetic children.....	44
3.4. Diabetic complications among CD diabetic children.....	45
3.5. Association of CD diabetic children with gender, consanguinity marriage, hypoglycaemia and diabetic ketoacidosis.....	46
Chapter Four	
4. Discussion.....	47
Chapter Five	
5. Conclusions and Recommendations.....	51
5.1. Conclusions.....	51
5.2. Recommendations.....	52
References.....	53
Appendix.....	62

List of tables

NO.	Table Title	Page
1.1	Abnormal Laboratory Findings in Celiac Disease	28
3.1	Comparison of clinical and laboratory data between type 1 diabetic patients with and without celiac disease.....	43
3.2	Association of CD diabetic children with gender, consanguinity marriage, hypoglycaemia and diabetic ketoacidosis.....	46

List of figures

NO.	Figure Title	Page
1.1	Iceberg model depicting prevalence of celiac disease	5
1.2	Villi on the lining of the small intestine	16
1.3	Normal and partial to total villous atrophy	17
3.1	Percentage of CD patients among the study population	42
3.2	Distribution of CD patients according to gender	42
3.3	Clinical signs and symptoms of CD diabetic children.....	44
3.4	Hypoglycaemia among patients with celiac disease	45
3.5	Diabetic ketoacidosis among patients with celiac disease	45

List of abbreviations

AACE	American Association of Clinical Endocrinology
Ab	Anti-body
ADA	American Diabetes Association
AGA	Anti-gliadin antibody
ARA	Anti-reticulin antibody
BMI	Body mass index
CBC	Complete blood count
CD	Celiac disease
CD4	Cluster of differentiation
CRP	C-Reactive protein
DH	Dermatitis herpetiformis
DM	Diabetes mellitus
EDTA	Ethylene diamine tetraacetic Acid
ELISA	Enzyme-linked Immunosorbent assay
EMA	Endomysium antibody
ESPGAN	European Society for Paediatric Gastroenterology and Nutrition
ESR	Erythrocyte sedimentation rate
GAD	Glutamic acid decarboxylase
GFD	Gluten free diet
GSE	Gluten sensitive enteropathy

HbA1c	Glycosylated haemoglobin
HLA	Human leucocytes antigen
HUC	Human umbilical cord
ICA	Islet cell antibodies
IDDM	Insulin-dependant diabetes mellitus
IDF	International Diabetes Federation
IF-γ	Interferon gamma
IgA	Immunoglobulin A
IgA-GA	Immunoglobulin A gliadin antibody
IgG	Immunoglobulin G
IMDC	Integrated management of diabetic children
MOE	Monkey oesophagus
NIDDM	Non-insulin-dependent diabetes mellitus
NOD	Non-obese diabetic
OD	Optical density
SDS	Standard deviation scores
SPSS	Statistical Package for the Social Sciences
T1DM	Type 1 diabetes mellitus
T2DM	Type 2 diabetes mellitus
TJs	Tight junctions
TMB	Tetramethylbenzidine
TNF-α	Tumor necrosis factor alpha
t-TGA	Tissue transglutaminase antibody
u/kg/d	Unit/kilogram/day
UKPDS	United Kingdom Prospective Diabetes Study
WHO	World Health Organization
WROB	Wheat, Rye, Oat and Barely