IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 10 Ser.1 (October. 2019), PP 74-77
www.iosrjournals.org

Diabetesamong Children, Its Diagnosis and Relation with Strains of Bacteria. A Research Analysis

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Abstract
Introduction*- A correlation between the challenge of Helicobacter pylori prevalence worldwide and the challenging spread of childhood diabetes in the world was kept in mind for this study. The rising frequency of childhood diabetes mellitus in the world should not be taken in separate consideration from the worldwide dramatic spread of adultdiabetes mellitus (DM). The correlation between diabetes and the increased incidence of obesity in children shouldbe also considered.H. pylori were suggested as one of the environmental reasons that could be directly related to the problem ofchildhood DM. The challenge lies mainly in the emergence of drastic resistant H. pylori strains due to the antibioticviolence against the stomach bacterium; these strains can travel from parents during early childhood to kidsleadingto a state of biological stress that could lead to stress diabetes; interestingly, children maintain the same straingenotype of H. pylori lifelong even they move to a different environment. The current eradication treatments of H.pylori have shown a lot of controversy; it would be a plea to cost the child's delicate structure the drastic side-effectsof repeated antibiotic eradication therapy upon detection of H. pylori each time.*
Material and method*-The study included 14 children aged between 7-10 years old with an early onset of diabetes mellitus. Children wereinvestigated together with their parents for the existence of H. pylori using specific tests. Colon-care and colon-clearwith natural purge and bio-organic acids were employed for H. pylori eradication for children and parents. Allchildren and their parents were found positive for H. pylori.*
Result*- all children became free of H.pylori strains after colonclearwhile parents of three families needed revision of colon clear in order to complete eradication of H. pylori. Thediabetic condition was successfully recovered in 12 children and they were able to quit therapy and maintain normalblood sugar values; two child aged 10and 9 years old had to continue on insulin in order to maintain normal blood sugarlevel.*
Conclusion*-It was concluded that the challenge of childhood diabetes could be simply part of the H. pylori-related worldwidedramatic spread of DM. Natural colon-clear should be considered as safe and effective measure for eradication ofthe abnormal-habitat colonic H. pylori strains. Revision of the guide lines of the newly discovered childhood diabetesshould be considered.*
Keywords- *Diabetes, childhood, H. pylori.*

Date of Submission: 18-09-2019 Date of Acceptance: 03-10-2019

I. Introduction

The epidemic of childhood diabetes is aworldwide challenge that could be directly related to the world'schallenging epidemic of childhood obesity or it is simply part of thedramatic spread of adulthood diabetes worldwide[1].The frequency of ketoacidosis at the onset of childhood in the worldparticularly in developing countries is significant. Prevention ofdiabetic ketoacidosis and control of its rising frequency should be ahealthcare target[2-4].Similar to adult diabetes mellitus (DM), Helicobacter pylori couldconstitute a major environmental reason that could be directly relatedto the challenge of childhood diabetes. It has been referred to apossible relation between H. pylori and diabetes mellitus in children insome studies, while this relation has been denied by other reports[5,6]. H. pylori has got an extreme widespread world prevalence; if the organism does not exist in the stomach of all the population indeveloping countries, the latest knowledge is that 80-90% of adults areestimated to be affected with H. pylori in these countries [7]. The flareup of a lot of worldwide medical problems related to H. pylori shouldattract the attention towards the possibility that the stomachbacterium could be responsible in part for the problem of DM inchildren. This possibility deserves to be seriously consideredparticularly if autoimmune pancreatitis comes among the medicaldilemmas related to H. pylori . Moreover, this suggestion is furthersupported by the fact that tonsils and adenoids are recently discoveredas secondary reservoirs for H. pylori in children [8,9]. In addition, thediabetic condition was

successfully corrected in adults by mereeradication of H. pylori . Different reports in literature have confirmedthe association of adenotonsillar hypertrophy in children with theexistence of cytotoxin-associated gene A (cagA) positive H. pyloristrains, and emphasized that cagA of H. pylori encodes a highlyimmunogenic and virulence-associated protein; the presence of this virulentgene in the body could affect the clinical outcome in manychildren [10,11].

II. AimAnd Objective

Demonstration of a possible relation between the worldwidespreading prevalence of H. pylori and the rising challenge of childhooddiabetes in the world.

III. Material And Method

A multiple-case clinical study was done at Katihar medical college and hospital.The protocol of the study was approved and the study followed theresearch committee ethics.

The study included 14 children with average body built and anaverage age range of 7-10 years old who were discovered with an earlyonset of hyperglycemia; wasting of weight and diuresis were observedon them and hence blood sugar level was tested and found above 270 mg/dl, the glycated hemoglobin (HbAIc) was above 12.2; confirmingthe onset of diabetes. Appearance and spontaneous disappearance ofthe diabetic condition in 8 children of them (57.1%) was a motive toattract the attention towards the possibility of a potential conditioncausing temporary insult to the pancreas that recovers spontaneously.

An influence of H. pylori was suggested; accordingly existence of H.pylori was tested in all children and their parents by employingspecific tests (urea breath test and H. pylori fecal antigen) [9,10].Immediate natural therapy for H. pylori eradication that consistedof colon clear employing the natural senna leaves purge together withcolon care using bio-organic acids (lactic and acetic) were employedfor all children and their parents.Urea breath test was done, while the H. pylori fecal antigen test wasalsoobtained.

IV. Results

All children and their parents were found positive for H. pyloriexistence; they became free of H. pylori strains in the stomach and thecolon after the natural therapy as confirmed by specific sensitive tests(urea breath test and H. pylori fecal antigen) except parents of six families who needed revision of colon clear in order to achievecomplete eradication of H. pylori . The diabetic condition has beensuccessfully corrected in 12 children (85.7%) without any insulintherapy with a blood sugar range of 100-126 mg/dl (HbAIc 5-6), while two diabetic child (14.3%) failed to respond to the natural therapy.Interestingly; the four children who were showing appearance andspontaneous disappearance of hyperglycemia before the studydemonstrated dramatic response to the natural therapy. The diet ofchildren and their bowel motion habits were watched, meanwhile theirmedical condition was followed up for 24 months. Recurrence of thediabetic condition within 2-6 months occurred in 6 children (42.9%)due to misbehavior in food intake or recurrence of abnormal behaviour H. pylori strains from one the parents; the diabetic condition wascorrected in 4 (28.6%) of them.

The results of this study was compared with records of other 6children of rather similar body built and rather similar age range (6-10 years) who newly developed diabetes mellitus with blood sugar rangebetween 260-270 mg/dl (HbAIc 10.5-11); their parents preferred toput them on insulin therapy. Their diabetic condition remainedinadequately controlled in spite of regular assessment of therapy andcarefulness about their food habits.

V. Discussion

The clinical presentation of type 1 childhood DM was studied bysome researchers in developing countries, it was emphasized that theclinical picture of type 1 childhood diabetes in developing countriesseems to differ from that in developed countries; [12] the difference inH. pylori prevalence in those countries might be a reason. The worldliterature does not have sufficient explanation for the rising burden ofdiabetes in children [2,3]. In the same way, pediatricians do notpossess good reasons for the children's diabetic phenomena indeveloping countries [13]. The world literature refers with concern tothe association and role of H. pylori in the adult metabolic syndrome.It was also shown that prevention of the metabolic syndrome wasachieved by H. pylori eradication in adults [14,15]. In spite of that, theworld literature lacks any information as concerns the role of H. pyloriin childhood metabolic syndrome (childhood obesity and childhooddiabetes).

H. pylori colonized the stomach since an immemorial time as ifboth the stomach and the bacterium used to live together in peaceharmless to each other and hence H. pylori may be considered anatural bacterium. Assuming that H. pylori is a natural bacterium, itcould travel from stomach to stomach via meals; therefore, existenceof H. pylori in children starts trans-familial during early childhood.This suggestion is confirmed by the fact that H. pylori strain ofchildren is often identical with that of their parents. Interestingly,children maintain the same strain genotype even after moving to adifferent environment [9,10]. The challenge lies in the

emergence ofantibiotic-resistant or abnormal behavior H. pylori strains, which ismost probably due to the abuse of antibiotics or inefficiency of thecurrent eradication strategies [16]. It would not be scientifically soundto cost the child's delicate physical structure or his immune system thedrastic side-effects of repeated H. pylori antibiotic eradicationtherapies upon detection of H. pylori each time; revision of the currentguidelines for the management of H. pylori may be needed [17].

H. pylori could migrate or get forced to migrate to the colon; it willcontinue producing ammonia for a reason or no reason, unopposed orbuffered by any acidity, leading to accumulation of profuse toxicamounts of ammonia that could lead to toxic biological stress or toxicpancreatitis causing an onset of diabetes. If the abnormal behavior H.pylori strains in their abnormal colonic habitat could lead to adversetoxic effects in adults, certainly the child's delicate physical structurewould be also severely affected by these strains [9,10].

Dietary vinegar (acetic acid 5%) has been recently demonstrated asdramatic, effective and decisive solution for all the challenges andmedical problems related to H. pylori infection including eradicationand re-infection. The cure rate of vinegar therapy reaches above 97% with negligible incidence of failure of treatment or recurrence ofinfection. The application of vinegar therapy in relief of symptoms andcure of H. pylori is simply based on a definite pathophysiologicprinciple that can offer wonderful promises to many patients [18]. Thecomplex nutritional requirements of H. pylori are achieved through itsunique pyruvate energy metabolism, which exhibits characteristicdislocation sites. These sites can beconsidered as targets that shouldattract any attempts to fight the organism [12]. As acetate isdemonstrated as an end product among the metabolic pathway of H.pylori ; this means that addition of acetic acid to the atmospherearound H. pylori could compromise the energy metabolism orinterfere with the organism's respiratory chain metabolism. Thissuggestion is supported by the fact that the major routes of generationof energy for H. pylori are via pyruvate and the activity of the pyruvatedehydrogenase complex is controlled by the rules of productinhibition and feedback regulation. It is further supported by theobservation that addition of pyruvate to different solid culture mediawas found to inhibit bacterial growth, and this inhibition wasattributed to accumulation of acetate and formate [12,18,19]. As the matter includes interference with the energy metabolism and therespiratory chain of H. pylori; an immediate paralysis of the organismcould be considered with dramatic relief of patient's symptoms. Thefastimmediate influence of acetic acid on H. pylori gives no chance forthe organism to resist the treatment with vinegar or to mutate anddevelop resistant strains.

Addition of pyruvate demonstrated a delayed inhibitory effect on themotility of H. pylori, while addition of the diluted vinegar and thediluted senna leaves extract showed an immediate lethal influence onH. pylori.

VI. Conclusion

more study with larger sample size are needed in future to clear the cloud about the relation of diabetes among children.

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Dr Anand Shankar. "Diabetes among Children, Its Diagnosis and Relation with Strains of Bacteria. A Research Analysis." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 10, 2019, pp 74-77.