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Characteristics of *Helicobacter pylori*-related Dysglycemia

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Abstract

The world literature considers that the world's burden of diabetes is on the account of type II diabetes although the newly discovered diabetic condition has been successfully and permanently corrected in many patients spontaneously. Traditional risk rules do not appear fully sufficient to explain the dramatic spread of diabetes mellitus all over the world; this could further indicate that traditional measures employed to control the problem can never be adequate or decisive. Most of the diabetic patients in the world are inadequately controlled in spite of regular follow up of medications and strict carefulness about their style of life; this could also indicate the presence of a missed underlying etiologic pathological factors.

Keywords: *Helicobacter pylori*; Dysglycemia; Diabetes mellitus

Review

Diabetes mellitus (DM) is a chronic degenerative disease described in three main clinical presentations; type I diabetes (juvenile diabetes), type II diabetes (adult diabetes) and childhood diabetes. Type I juvenile diabetes and childhood diabetes are considered familial disorders including depletion of B cells of islets of Langerhans; therefore, they are treated with insulin therapy. Type II diabetes is a delayed or secondary degenerative illness where the B cells are not completely destroyed; hence it is treated with oral medications that regulates or stimulates production of endogenous insulin [1].

The latest reports in literature confirm the prevalence of abnormal *Helicobacter pylori* strains with flare up of a lot of medical challenges related to it through immune, inflammatory, toxic or different unknown reasons; *H. pylori*-related dysglycemia or diabetes is one of these challenges. *H. pylori*-associated autoimmune pancreatitis is not behind the development of DM as autoimmune pancreatitis affects mainly the exocrine function of the pancreas but not the endocrine one. *H. pylori*-related dysglycemia or diabetes is a potential condition developing due to toxic biological stress; thus it is readily curable if managed properly especially when newly discovered [1-3]

H. pylori colonized the stomach since an immemorial time as if both the stomach wall and the bacterium used to live together in peace harmless to each other. *H. pylori* could migrate or get forced to migrate to the colon under the influence of the antibiotic violence; *H. pylori* in the colon will continue producing ammonia for a reason or no reason, unopposed or buffered by any acidity unlike in the stomach leading to accumulation of profuse toxic amounts of ammonia. Accumulation of toxic amounts of ammonia could constitute a biological toxic stress to the body that could lead to stress diabetes in predisposed susceptible individuals. Administration of oral hypoglycemic pills to a stressed pancreas means an insistence to flog a tired horse turning a potential condition into an established chronic illness with consequent flare up of the diabetic phenomena all over the world. Migration of *H. pylori* to the colon is life-long unless eradicated while there is no available measure to get rid of the migrated strains from the colon rather than the potent natural senna leaves extract purge [2,4].

The world reports claim that the world's burden of diabetes lies mainly on the account of type II diabetes which does not stand over solid scientific grounds as the traditional risk rules are not sufficient to explain the rising figures of diabetes in the world and the world's traditional efforts to control the disease are never yet successful or decisive. Moreover, most of the diabetic patients in the world are inadequately controlled in spite of regular follow up of medications and extreme carefulness about their style of life which could further indicate the existence of a missed underlying pathologic etiological error. While on the other way, in many cases of newly discovered DM associated with frank history of *H. pylori* dyspepsia, the diabetic condition has been successfully and permanently corrected by mere eradication of colonic *H. pylori* strains [3].

H. pylori-related diabetes or induced diabetes could be a reversible and a curable condition particularly if newly discovered before administration of oral pills. Different series done by the authors employing natural measures for eradication of colonic *H. pylori* strains demonstrated that most newly discovered diabetic patients associated with *H. pylori* dyspepsia (89%) were simply cured and 61% of those with short history of oral therapy intake were able to quit their medications and maintain normal blood sugar values relying essentially on diet control. In this regard, juvenile patients and children who develop diabetes are having the advantage of receiving insulin therapy that offers physiological rest to the pancreas allowing better chances for recovery of their conditions if it is realized later to be related to *H. pylori* dyspepsia [3,4].

Eradication of abnormal-behavior *H. pylori* strains from the colon is done by colon clear employing the potent natural senna leaves extract purge as it kills and expels all the bacteria from the colon. Colon care is maintained by intake of a vinegar-mixed food with meals once or twice a day for three or five days every week as vinegar

interferes with re-setting up of abnormal-behavior strains of *H. pylori* colonization through interference with the energy metabolism and respiratory chain metabolism of the bacterium as the main source of energy for *H. pylori* are via pyruvate and the enzyme pyruvate dehydrogenase complex is controlled by the rules of feedback regulation and product inhibition [5-7].

According to the observational findings among the patient series of the studies done by the authors whether they were cured patients, established diabetic conditions or patients who quit or did not complete the study; *H. pylori*-related dysglycemia or diabetes differs from type II diabetes in characteristic manifestations and facts:

- Association with frank *H. pylori* dyspepsia is an integral finding in *H. pylori*-related diabetes.
- In addition to heart burn, burping, distension and constipation; passage of small hard pieces of dried stool indicates existence of multiple colonic spasms due to the smooth muscle spastic effect of the profusely accumulated ammonia in the colon.
- Loss of the main colonic function of formation of the bowel contents manifested in passage of soft unformed motions due to presence of high rectal and high sigmoid spasms with consequent dilatation of the colon in order to accommodate its contents.
- Sometimes patients with *H. pylori*-induced diabetes do not feel hungry but they feel they like to eat because of feeling some colic in the centre of abdomen falsely believing it as hunger pains, hence they do not reach satiety after food intake; the solution is having vinegar-mixed food after a small snack and this could help relief of colonic spasms via inhibition of ammonia production by *H. pylori.*
- Recurrent gasping on minor effort or even upon turning while lying in bed due to pressure on diaphragm by the distended or multiply-spastic colon with consequent embarrassment of the lungs vital capacity.
- Recurrent faint focal stinging potash-like taste sensation related to some teeth felt by tip of the tongue due to production of ammonia by dental *H. pylori* colonization; these strains are famous of causing gastric recurrence, the solution is mouth wash with diluted dietary vinegar once or twice.
- Constitutional symptoms such as burning sensation in sole of feet, heaviness and swelling in extremities and pitting edema of lower limbs particularly the left or the dependant side during sleep are constant features most of the time and are due to salt and fluids retention in the body from the colonic contents (pitting edema over chin of the tibia is therefore a constant feature); the treatment is definitely colon care and colon clear.
- Motion symptoms ranging between false sensations to pass motion or passing flatus instead, difficulty in passing motion, passage of hard pieces of dry stool, passing soft unformed motion or frequent need to pass small amounts of soft motion after every food intake because of loaded colon.
- A normal individual can over eat even beyond satiety whenever he likes to do or if he likes the food, while an *H. pylori* dyspeptic person may find his meal is reduced most of the time than he is expecting or he is used to; that is due the frequent pressure on the stomach by the loaded colon.
- A normal individual does not need urgently to pass motion whenever he is having a heavy meal unless he is constipated or not visiting the toilet for few days as the colon forms and accommodates the colonic contents to pass the motion once or twice per day; while in an *H. pylori* dyspeptic patient and due to the condition of the loaded colon, a person may sometimes run to pass only a scanty amount of soft motion whenever he is having any size of a meal.
- The smaller the size of pieces of stool and its situation of dryness is related to the severity and amount of colonic spasms which in turn related to heaviness of existence of colonic *H. pylori* strains.
- The thickness of the mucus surrounding pieces of stool is also related to heaviness of existence of *H. pylori* strains; whenever *H. pylori* exists in heavy percentage, the more viscous and thick is the mucus around.
- Involuntary incontinence to an abundant amount of soft stool is very unusual event; if happens, it is due to a loaded colon or a loaded rectum inducing a recto-colic mass reflex; it is simply very similar to retention with overflow, it indicates the need for colon clear by the natural senna purge.
- Painless passage of continent watery motions or just mucoid secretions, single or repeated times (without any fever, dysenteric sensation or cramps) is also a very unusual event, it is due to severely resistant high rectal or high sigmoid spasm (demonstrated by sigmoidoscopy or colonoscopy) leading to severe multiple colonic spasms attempting to reduce the size of the colonic contents, the squeezed colonic contents leaves its watery component to pass out. Diffuse minute abdominal colics are audible on auscultation and the rectum is usually contracted on P/R examination due to the ammonia contained in the rectum and sigmoid. This condition usually follows heavy set-up of colonic *H. pylori* strains after a query meal. The treatment in this situation is immediate colon clear of all colonic contents by the potent senna purge but never by any constipating or anti-diarrhea mixture.
- Prolapsed piles is a common association with *H. pylori*-induced diabetes because of constipation and straining, straining in such situation is useless because of the presence of high sigmoid and/or high rectal spasm resisting the action of the raised abdominal pressure by straining; patients should not sit too long for passing motion, they should not also do un-necessary straining and they should better learn how to do two-finger anal dilatation while passing motion to remove rectal small contents and to avoid prolapse of piles. The presence of a high rectal and a high sigmoid spasms were simply detected by sigmoidoscopy.
- If patients cannot help to remove some high rectal small contents by finger evacuation, they should not insist long time for that and they better refer to have a vinegar-mixed food after a small snack; this could help passing a motion as the vinegar could relieve colonic spasms via inhibition of production of ammonia.
- Constipation associated with *H. pylori* dyspepsia is so severe being induced by the spastic effect of excess ammonia in the colon, it does not respond to adequate antispasmodic and laxative measures; it cannot be overcome except with vinegar mixed with food as it inhibits ammonia production from colonic *H. pylori* strains. Colonic contents in such situation can be readily cleared only by the senna purge.
- Constipation related to *H. pylori* dyspepsia is not absolute constipation as there is frequent passage of winds due to liberation of profuse amounts of ammonia in lower colon.
- A definite knowledge about observations in superimposed amoebic upsets on top *H. pylori* dyspepsia is not quite available yet due to lack of sufficient association data of both conditions except for a remarkable cramping at the centre of abdomen which is not relieved by a vinegar-mixed food in addition to change of the nature of mucus surrounding the motion contents in amount and

character; oral locally-acting intestinal antiseptic measures could be tried in this situation.

- Frequency of micturition is not necessary all the time to be due to uncontrolled blood sugar, it is in many times due to local irritation via a local axon reflex because of accumulation of ammonia or slipping of a small dried piece or pieces of stool into the rectum; the frequent urine in such situations is not ample and diluted, on the contrary it could be in many times scanty and concentrated.
- Slipping of small pieces or piece of dried stool into the rectum cannot be prevented by the sigmoid as being small sized, these small dried pieces of stool do not usually initiate a motion desire or a motion reflex because of their small size but would continue to cause bladder irritation and urgency for passing urine in spite of its small amount because of the continuously produced ammonia by *H. pylori* contained in these small pieces of stool; finger evacuation of these small pieces of stool is definitely the solution.
- Incontinence of few drops of urine or occasional loss of control of the whole urine could also very infrequently happen due to the same reason of local irritation; however this matter is self-limited and is improving spontaneously even without using the suggested natural therapeutic measures due to adaptation to the causative reasons of local irritation.
- A normal individual usually does not leave the bed for urgency of urine; the urinary bladder accommodates the urine and the job is done once the person gets up from sleep. In the same way, a normal subject does not leave the bed for urgency to pass motion as the colon forms and accommodates the colonic contents to pass the motion once or twice per day. A diabetic patient leaves the bed frequently during sleep when the blood sugar is not controlled. An *H. pylori*-induced diabetic patient may not leave the for urgency of urine if his blood sugar is controlled due to stable colonic condition, while he may leave the bed for urgency of urine if his blood sugar is uncontrolled or his colon is upset; he may even feel urgency to evacuate the rectal contents in order to reduce the frequency of micturition or urgency for urine.
- Blood sugar level is frankly affected by the colonic condition; many times it is not controlled in spite of extreme carefulness in food intake; this is caused by accumulation of excess amounts of ammonia in the colon because of colonic troubles due to indigestion and colonic upsets.
- Complete fasting may help control of *H. pylori*-related dysglycemia because of avoiding reasons of digestive troubles causing accumulation of toxic ammonia in the colon while fasting in type II diabetes might deprive the pancreas from the stimulant effect of food with consequent low response of endogenous insulin.
- Asthmatic discomfort, morning throat secretions and nasal sinuses symptoms in patients with *H. pylori* dyspepsia and their relation to the bacterium are still under evaluation and assessment.
- Long term history of type II diabetes is unhealthy for erectile function because of development of diabetic microangiopathy, while *H. pylori*-related dysglycemia shows improvement of erectile function in most patients particularly in the beginning of illness; the explanation of this matter is still under detailed evaluation.

Conclusion

Accordingly, *H. pylori*-related diabetes can be avoided; it is very possibly a preventable condition or even it is readily curable if managed well when newly discovered and complications of this type of dysglycemia can be therefore easily prevented.

Therefore; the correct nomenclature or term is "*H. pylori*-related dysglycemia" but not "*H. pylori*-induced diabetes" as the patient's blood sugar is most of the time within normal range without medications or even hypoglycemic whenever feeling hungry; he is hyperglycemic almost only in association with colonic upsets. This means that a patient with *H. pylori*-induced dysglycemia does not need to follow regular medications, he needs only to use fractionated doses of regular or long acting insulin equivalent to the blood sugar level when it is uncontrolled; definitely he should not use oral hypoglycemic pills.

As concerns outside-home meals, food in general is innocent as regards *H. pylori*-dyspepsia and existence of abnormal *H. pylori* strains; it is the abuse of antibiotics mainly by food handlers; antibiotic violence change the behavior of their *H. pylori* strains which is transmitted from their stomach to stomach of others.

On conclusion, the ideal strategy in dealing with the challenge of *H. pylori*-related dysglcemia is natural eradication of colonic *H. pylori* strains via employing the senna leaves extract purge, maintain colon care by vinegar therapy, guard against gastric recurrence form dental colonization by mouth wash with diluted vinegar twice/week, control of fecal-oral recurrence by disinfecting hands with white vinegar after washing with soap and water and protect from re-set up of gastric colonization via oral intake by having a vinegar-mixed food after any query meal.

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