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Mini Review

Spotlight on Chronic Diabetes Complications: More than Glucose in the Blood

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Abstract

The blood plasma glucose-protein interactions model (glaciation theory) for the study of diabetes complications has failed to find cure for, or prevention of, long-term chronic diabetes complications. A new paradigm is, therefore, needed. Published data showed that polyuria reduced blood plasma concentrations of thiamine (a vasodilator) in diabetes mellitus patients to 25% of the concentration level needed to sustain full 24-hour vasodilatation in the microcirculation of healthy persons. This led to the hypothesis that the daily deficiency causes vasoconstriction in the microcirculation; impairing the exchange of nutrients, gases and particles between blood and tissue; causing tissue damage in organs with microcirculation. Over time, the accumulated tissue damage manifests as organ dysfunction described as "diabetes complications". Supplementation with vasodilators to ensure 24-hour vasodilatation of the microcirculation halted the tissue damage and natural healing of symptoms of micro- vascular complications, such as sores, blurred vision, swollen ankles/feet, occurred. Polyuria, not blood plasma glucose, has been shown to be the cause of chronic diabetes complications. This change of paradigm represents a breakthrough in diabetes research. Early evidence suggests that further investigation into the relationship between polyuria and diabetes complications is warranted.

Keywords: Diabetes complications; Vasodilators; Vasodilatation; Microcirculation; Micro-vascular complications; Polyuria

Introduction

"Diabetes" is from a Greek word meaning a "siphon"; because people with the condition "pass water like a siphon". The "water" passed was either honey–flavored or unflavored; hence the Latin words "mellitus" (from *Mel*; honey) and "Insipid us" (flavorless, tasteless). So "passing water like siphon" is the event; mellitus and insipid us are merely descriptions of the flavor of the "water".

Apart from nuisance value, "passing water like siphon", the event, has been ignored as having no further influence on the progress of the condition. These days, when the word "diabetes" is heard, it is immediately associated with diabetes mellitus – a condition of high glucose concentration in the blood plasma; and almost all research and clinical efforts are undertaken with this meaning in mind. Accordingly, the glycation (glycosylation) theory – glucose-protein interactions - has been advanced [1] to explain the complications associated with diabetes and find cure or prevention.

It is no wonder that all micro and macro vascular complications associated with the condition are also described as "diabetes complications". But, "passing water like siphon" is only another way of saying, "there is increased frequency in urination and volume of urine produced". This is the definition of polyuria.

Thornalley et al. [2], demonstrated emphatically the effect of polyuria on the concentration of blood plasma thiamine in type 2 diabetes patients although they did not realize it, then. Their data is summarized in Table 1 below.

Table 1, shows that polyuria reduced the concentration of thiamine in the blood plasma of diabetes patients to 25% of the blood plasma thiamine concentration of people without diabetes.

[Babani N, Thornalley, [3] however, did not apply any interpretation of this data on subsequent clinical trial they conducted to show how thiamine improved the health of diabetic patients with complications. They resorted to the glycation theory, instead.]

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Category/Thiamine conc. nmol/l	Type 1 (26)	Type 2 (48)	Healthy persons (20)
Initial	100	100	100
After 24 hrs.(Mean) SD	15.4 (9.6)	16,3 (11.5)	64.1 (12.1)
Volume of urine	4 V	3V	V
Urine clearance	25X	16X	X

Table 1. Data fromThorn alley et al.

Polyuria: The cause of Chronic Diabetes Complications. Bempah [4] used the data of Thornalley's group to propose his theory. Relating the conclusions of the experimental findings to normal, daily, diet-sourced vitamin B intake, Bempah theorised that when total blood plasma concentrations of niacin and thiamine (vasodilators), in persons with diabetes were reduced to around 50% of the plasma blood concentrations of the vasodilators required by healthy persons to sustain full 24-hour vasodilatation in the microcirculation, vasoconstriction occurs in the microcirculation. (This assumes that niacin and thiamine act in synergy). The vasoconstriction impacts adversely on the exchange of nutrients, gases and particles between blood and tissues, and this results in daily tissue damage in all organs with microcirculation: eye, kidney, heart, brain, skin. Over a period of time, (anywhere between 5 - 40 years), the accumulated tissue damage results in organ malfunction, generally described as "diabetes complications".

Bempah [4,5] tested and demonstrated, in a seven-year open trial, the validity of his hypothesis that if the chain of events initiated by polyuria and culminated in tissue destruction was, indeed, the cause of "diabetes complications", then, supplementation with vasodilators to sustain full 24-hour vasodilatation of the microcirculation would stop tissue damage. Adding vitamin b5, the universal tissue repair kit, to the supplement will naturally cure all symptoms of diabetes complications affecting the susceptible organs and prevent reoccurrence.

The one-a-day tablet formulated and used in an (still running) Open trial, cured all early-stage symptoms of micro vascular complications, such as; healing, ulcers that resist healing; recurrent swollen feet/ankles; retinopathy; "burning feet syndrome"; erectile dysfunction; numbness in toes, feet and legs; body pains in the morning; etc; and prevented reappearance of symptoms over seven years; as at the time of this report.

Not only that, the same therapy was also used to treat and cure similar symptoms on persons who had been persistently assured by their medical advisors that they did not suffer from diabetes mellitus. They shared a common symptom with persons with diabetes mellitus, though: polyuria.

Further, Bempah's theory fully explains all the reported improvements, cures and healings observed by researchers using high doses of thiamine [6,7] and its lipid- soluble derivative, benfotiamine [8,9]. He believes that pyrimidine – a degradation product of both thiamine and benfotiamine – is the vasodilator that ensures 24-hour vasodilatation in the microcirculation to stop further tissue damage for healings and cures to occur naturally.

Objections to theory: Objection has been raised that, diabetes complications are very often used to diagnose diabetes mellitus in patients and so, not all complications can be said to be long-term effect as claimed. The answer to this is that Bempah's theory assumes the same baseline concentration of vasodilators (vitamins b1 and b3) in the blood plasma of all persons. This clearly is not valid as vitamin B concentration in the blood plasma depends on various factors, including: life-style, diet, whether one is alcoholic or one has been on diuretic drugs for conditions such as hypertension for a long time, diabetes insipidus patient, etc. Besides, it is common knowledge that, it takes up to 5 years or more from the onset of diabetes for the patient to be diagnosed. Therefore, it is not surprising that some people manifest diabetes complications before being diagnosed with diabetes mellitus.

Conclusion

The early results have demonstrated that polyuria, rather than high plasma glucose concentration, is the remote cause of diabetes complications and the therapy predicted by the theory cures and prevents early stage symptoms of diabetes complications. No attempt has been made at this early stage to explain the nature of the tissue damage or how the healings/cures occur; these areas are to be explored at a later stage. However, this theory represents paradigm change in research into diabetes and its complications and is potentially, a more promising tool.

Recommendation

Further investigation into the relationship between polyuria and long-term chronic diabetes complications is warranted.

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References

1. Cousens, G, Rainoshek, D. (2008). There is a cure for diabetes. *North Atlantic Books*.
2. P. J. Thornalley, R. Babaei-Jadidi, H. Al Ali, et al. High prevalence of low plasma thiamine concentration in diabetes linked to a marker of vascular disease. *Diabetologia*. 2007;50(10):2164-2170.
3. Rabbani N, Thornalley PJ. Emerging role of thiamine therapy for prevention and treatment of early stage diabetic nephropathy. *JDMDC*. 2011;13(7):577-583.
4. Bempah O.A. Vitamin B Blood Plasma Deficiency Model for the Study of Diabetes Complications Demonstrates Potential for the Cure and Prevention of Complications in Type 2 Diabetes Mellitus Patients. *JDMDC*. 2015;2(2):033-034.
5. Bempah O.A. The Cure and Prevention of Early-Stage Symptoms of Long-term Diabetes Complications are Independent of the Methods used to Control Blood Plasma Glucose. *JDMDC*. 2016;3(2):66.
6. Rabbani N, Shahzad Alam S, Riaz S, et al. High dose thiamine therapy for patients with type 2 diabetes and microalbuminuria: a pilot randomised, double-blind, placebo- controlled study. *Diabetologi*. 2009;52(2):208-212.
7. Hammes H-P, Du X, Edelstein D, et al. Benfotiamine blocks three major pathways of hyperglycaemic damage and prevents experimental diabetic retinopathy. *Nat Med*. 2003;9(3):294-299.
8. Babaei-Jadidi R, Karachalias , Ahmed N, et al. Prevention of incipient diabetic nephropathy by high dose thiamine and Benfotiamine. *Diabetes*. 2003;52(8):2110-2120.
9. Ziporin Z.Z, Nunes W.T, Powell P, et al. Thiamine requirement in the adult human as measured by urinary excretion of thiamine metabolites. *J. Nutr*. (1965);85(3):297-304.