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Mini Review

Important of B-Complex Vitamins in Treatment Protocol in Diabetic Patients

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Abstract

This search includes the vitamin B-species which must be taken by diabetic patients. Where these vitamins keep the health of patient not merely but help the metabolism of glucose which is the blood sugar. The vitamin B-complex must be prescribed before the drugs which treat the diabetes (Insulin and oral hypoglycaemics). Because these vitamins keep the integrity of patient health and play the major role of metabolism of glucose.

Keywords: Vitamin B; Diabetic Patients; Metabolism; Glucose

Introduction

The diabetic patients are unlucky specific in poor countries where no present of enough health education [1,2], where the diabetic patient need eat more than the healthy people because the blood glucose stay in blood and no go to the cells of tissues so the diabetic patients since with hungry more than the healthy people so the diabetic coma either to hyperglycaemic take solution of sugar, and the coma of hypoglycaemic also. The increase of blood glucose level lead to inflammation of the nerves [3-7], this inflammation of nerves will loss of sensation of the nerves. In poor countries the diabetic patient if injured by screw or old metal he is not sense [8-10]. So this research must be considered for the physicians whose deal with the diabetic patients. The physician must be prescribed the B-complex vitamins before the antidiabetic drugs (Insulin- type1 diabetes and oral hypoglycaemics- type 2) due to the cyanocobalamin vitamin B12 prevent the inflammation of nerves, vitamin B3 nicotinamide participate of co-enzyme NAD which play role in metabolism of glucose. Also vitamin B2 riboflavin participates of co-enzyme FAD which required for glucose metabolism [9-14]. These vitamins (B2, B3 and B12) are essential for diabetic patients. The whole vitamin of B species are important for protection the health of people also prevent the people from diseases and increase the immunity the vitamin B species are B1(thyamine), B2(riboflavin), B3 (nicotinamide), B5 (pantothenic acid), B6 (pyridoxine), B7 (biotin), B9 (folic acid), B12 (cyanocobalamin) and B17 (amygdaline) [15-24].

Chemistry

Vitamin B1 (thiamine)

A coenzyme in the catabolism of sugars and amino acids (Figure 1) [25,26].

Vitamin B2 (riboflavin)

A precursor of coenzymes called FAD and FMN, which are needed for flavoprotein enzyme reactions, including activation of other vitamins (Figure 2) [27].

Vitamin B3 (nicotinamide)

A precursor of coenzymes called NAD and NADP, which are needed in many metabolic processes (Figure 3) [28-30].

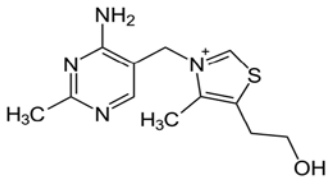

Figure 1: 2-[3-[(4-amino-2-methylpyrimidin-5-yl)methyl]-4-methyl-1,3-thiazol-3-ium-5-yl]ethanol.

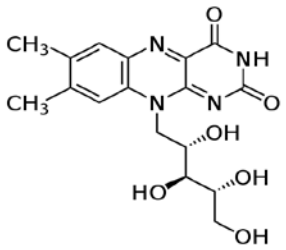

Figure 2: 7,8-Dimethyl-10-[(2S,3S,4R)-2,3,4,5-tetrahydroxypentyl]benzo[g]pteridine-2,4-dione.

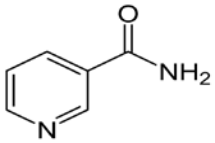

Figure 3: Pyridine-3-carboxamide.

Vitamin B5 (pantothenic acid)

A precursor of coenzyme A and therefore needed to metabolize many molecules (Figure 4) [31].

Vitamin B7 (biotin)

A coenzyme for carboxylase enzymes, needed for synthesis of fatty acids and in gluconeogenesis (Figure 5) [32].

Vitamin B9 (folic acid)

A precursor needed to make, repair, and methylate DNA; a cofactor in various reactions; especially important in aiding rapid cell division and growth, such as in infancy and pregnancy (Figure

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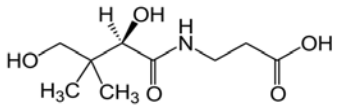

Figure 4: 3-[(2,4-dihydroxy-3,3-dimethylbutanoyl)amino] propanoic acid.

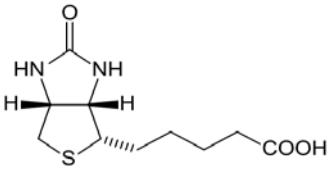

Figure 5: 5-[(3aS,4S,6aR)-2-oxohexahydro-1H-thieno[3,4-d]imidazol-4-yl] pentanoic acid.

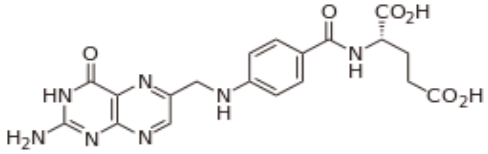

Figure 6: (2S)-2-[(4-{[(2-amino-4-hydroxypteridin-6-yl)methyl]amino}phenyl) formamido]pentanedioic acid.

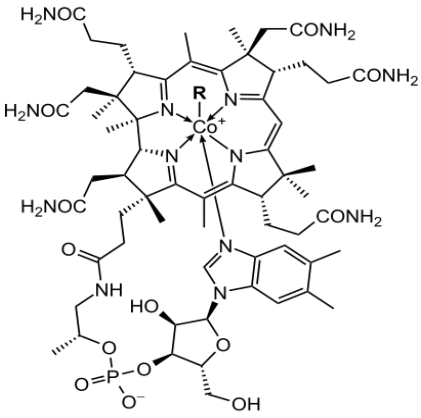

Figure 7: R=CN.

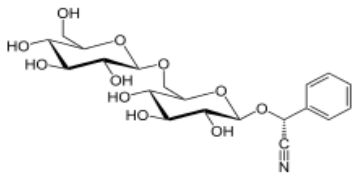

Figure 8: (2S,3S,4S,5R,6R) - 6 - [(R) - cyano(phenyl)methoxy] - 3,4,5 - trihydroxyoxane - 2 - carboxylic acid.

6) [33].

Vitamin B12 (cyanocobalamin)

Commonly cyanocobalamin or methylcobalamin in vitamin supplements. A coenzyme involved in the metabolism of every cell of the human body, especially affecting DNA synthesis and regulation, but also fatty acid metabolism and amino acid metabolism (Figure 7) [34].

Vitamin B17 (amygdalin)

Not used in medicine due to its toxicity (Figure 8) [35-37].

Conclusion

The vitamins are important for people to him vitality and very important for people suffer from diseases and take drugs treatment for example phthalazin, quinazolin, quinoxalin and benzemidazole neucleous of drugs due to these neucleuses include broad drugs, also the diabeic patients vitamins more than the healthy people specially vitamin B complex.

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