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Commentary

Brief Comment on the Prevention and Detection of Diabetic Retinopathy

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Diabetes mellitus type 2 (DM2) has an epidemic evolution worldwide, it has become an emergency due to the serious damage to health it generates among the millions affected. Its complications stem from cellular damage due to the entry of massive glucose from the blood and from the digestive tract through the consumption of high glycemic index foods. Usually they are very processed foods of refined flours, to which fructose is added that cannot be degraded until $CO_2 + H_2O$ because its metabolism is via fructose 1 phosphate and from there to triglyceride, with the consumption of energy, accumulation of AMP that is converted into uric acid, if inflammatory components are added to this, the damage of both intracellular and extracellular proteins begins, generation of local hormones that alter the DNA. On the other hand, the glucose coming from the refined flours goes to the cell and is quickly added to the proteins, to the lipids, it auto-oxidizes, generates free radicals and with the beginning of the tissue degeneration.

This chain of pathophysiological events associated with the consumption of foods with a high glycemic index as they evolve with the age of the people and depending on their genetics and poor consumption of fiber and other nutrients present in fruits and vegetables, begin to manifest symptoms, in their mouth, in his vision, as headache and shortness of breath in the case of high blood pressure, or pain from neural inflammation. It is until then that they identify in their lab tests elevation of the glycemia where there is no doubt that they have diabetic status.

The ocular lesions may be due to cataract, glaucoma, hyaline hemorrhage, or different degrees of retinopathy. It is well known that these damages will be much more frequent if other factors are added to hyperglycemia such as hypertension, smoking, chronic stress and the time of evolution of hyperglycemia, thus after 10 years retinopathy it may be present in more than 30% of patients.

Having said that, the primary prevention of diabetic retinopathy is carried out by promoting the healthy diet that implies being free of high glycemic index foods, daily consumption of fruits and vegetables and maintaining a body weight according to height, which It is most easily accomplished by performing daily physical exercise for 30 minutes and doing your best not to smoke.

The secondary prevention is to reach the control of the hyperglycemia in such a way that the patients are maintained with a glycosylated hemoglobin less than 7% as a result of healthy eating habits and practice of physical exercise, as well as pharmacological treatment when necessary, if still with these measures are not achieved control goals.

It is advisable, according to experts in the field, such as Dr. Carrillo-Alarcón Lourdes Cristina [1] to assess the patients who attend first-level care services through the formal training of primary health care physicians, in order to identify the ocular pathology and refer patients for their preventive treatment of retinopathy and prevent further evolution of it followed by blindness. As it is an epidemic of DM2, it is necessary to identify the number of patients who must be assessed at least once a year and more frequently when they have been in hyperglycemia for several years because they do not apply in the modification of their habits food and also attend hypertension. It is also necessary to know the sites of the second and third level to identify the sufficiency of specialized personnel to apply the treatment of proliferative retinopathy.

Bibliography

1. Carrillo-Alarcón Lourdes Cristina., *et al*. "Effectiveness in the Implementation of a Sectorial Diabetic Retinopathy Prevention Program in Hidalgo, Mexico". *EC Ophthalmology* 8.2 (2017): 43-54.

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