

Diabetes & its Complications

Lifestyle Management in Diabetes

Tarun Saxena^{1*}, Azeema Ozefa Ali², Manjari Saxena³

¹MD (Internal Medicine), Senior Consultant, Department of Internal Medicine, Mittal Hospital and Research Centre, Ajmer, India.

²B.H.M.S. Resident doctor, Department of Internal Medicine, Mittal Hospital and Research Centre, Ajmer, India.

³M.SC., PGDYHS Department Yoga and Physical Education, Mittal Hospital and Research Centre, Ajmer, India.

*Correspondence:

Tarun Saxena, MD (Internal Medicine), Senior Consultant, Department of Internal Medicine, Mittal Hospital and Research Centre, Ajmer, India, Tel: +91-9829089284.

Received: 21 September 2019; **Accepted:** 13 October 2019

Citation: Tarun Saxena, Azeema Ozefa Ali, Manjari Saxena. Lifestyle Management in Diabetes. Diabetes Complications. 2019; 3(4): 1-2.

ABSTRACT

Type-2 diabetes mellitus has a clear link with central activity, chronic mental exhaustion; chronic stress has a certain role in its appearance and progression. Mental rest is found to have an improvement in glycaemic parameters.

Keywords

Type-2 diabetes mellitus, Insulin resistance, Lifestyle.

Introduction

The pathogenesis of type-2 diabetes is multifactorial. It is not merely a disease of the endocrine system. Central impulses (chronic mental stress, chronic mental exhaustion) have a definite role in the precipitation/progression of the disease. Insulin resistance, central obesity, fatty liver is also a known fact associated with central factors [1,2]. Despite a few studies about lifestyle factors and diabetes in literature, awareness regarding its practical implication in day to day life is lacking. Therefore to reemphasize the role of lifestyle factors in the management of diabetes, this short review was planned.

Methods

Various studies have been used to review the process [1-18].

Results

It was found that in diabetic patients there was presence of chronic mental stress (due to multiple reasons, like crowding of ideas, inability to divert mind, easy loss of control, anger, jealousy, rivalry etc. chronic mental exhaustion (more mental work >7 hours and less mental rest <7 hours and less sleep duration <7 hours) and persistent fast mental speed. All such process produces desynchronized activity in EEG (desynchronized cortical activity). The cerebral cortex has extensive connections with the hypothalamus and has indirect control over it. Chronic stress/exhaustion leads to

impaired cortical-hypothalamic signals. This, in turn, increases the basal sympathetic discharge from the hypothalamus. Increased basal sympathetic discharge affects K⁺ (potassium) kinetics, its efflux from the pancreas (responsible for insulin release) and its entry into muscles and liver which is the simultaneous pathway for glucose entry (insulin sensitivity) leading to diabetes. Vipassana (mental relaxation/rest technique) showed synchronization in EEG, reduction in basal sympathetic discharge, and significant improvement in FBG (fasting blood glucose)/PPBG (postprandial blood glucose)/HbA1c (glycosylated hemoglobin) and lipid profile in diabetes patients after 12 weeks [1,2,6].

Conclusion

It is concluded that chronic mental exhaustion and chronic mental stress are the desynchronized state of the brain, associated with increased basal sympathetic discharge and diabetes. Mental rest reduces the expenditure of neurotransmitters, reduces stress, synchronizes brain, reduces basal sympathetic discharge and helps in the control of diabetes.

Clinical implications

For proper management of diabetes mental health assessment (either self-assessment or by a clinician) is mandatory. Assess day to day lifestyle health factors like working mental hours / mental rest/duration of sleep. Assessment of stress which includes anxious mood, tension, crowding of ideas, fast mental speed (doing everything in haste), depressed mood, etc. and chronicity of such factors is also necessary.

For chronic mental exhaustion, the following must be done.

Avoid

- Avoid continuous mental exhaustion (burn out)/stress by an adequate balance between mental work and physical activities.
- Avoid excess use of laptop, mobile, computers and television
- Avoid excess speaking, reading, writing
- Avoid meditation (already exhausted brain)
- All such efforts should be started from early life

Practice

- Try to reduce the mental work for less than 7 hours
- Take adequate mental rest regularly daily at the weekend and month-end
- Good sound sleep for around 7 hours daily to rejuvenate neurotransmitters and reduce exhaustion
- Practice mental relaxation/Vipassana which helps to replenish the neurotransmitters (Vipassana –state of complete mental silence- i.e. no active writing, reading, no speaking, it must be quantitative more the mental exhaustion/ duration of diabetes more the hours of vipassana)
- Spend some time in the garden to have tranquillity of mind
- Practice yogic exercises daily

For chronic stress and fast mental speed following must be done

Avoid

- Avoid hurriedness in completing work
- Avoid competitiveness, jealousy and high expectations in life
- Avoid crowding of ideas, tension, and anxiety

Practice

- Meditation
- Spend some time in nature it reduces stress and fast mental speed
- Practice yogic exercises daily

Try to divert the mind from stress thoughts by listening to soft music, light sports, etc.

All such above measures rejuvenate the brain, helps in replenishment of neurotransmitters, synchronize cortical- hypothalamic signals, decrease basal sympathetic discharge and help in the control of diabetes.

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