

Module III-7

Long-term complications

Overview

While the underlying pathophysiology and management of both of the major forms of diabetes differ, a common feature is the development of long-term micro- and macrovascular complications, such as retinopathy, nephropathy, macrovascular disease and peripheral and autonomic neuropathy. These complications are associated with increased morbidity and mortality.

The predictors for the development of microvascular complications are duration of diabetes and poor metabolic control. However, the progression of these complications can be reduced by prompt and intensive treatment. Therefore, strategies must be in place for their early detection.

As type 2 diabetes can be present for many years before diagnosis and up to 30% of people already have a complication at diagnosis, the assessment of complications should begin at diagnosis and annually thereafter. Adults with type 1 diabetes should be assessed within 5 years of diagnosis and annually thereafter.

Goals

- To develop a comprehensive understanding of the pathophysiology of micro- and macrovascular complications
- To provide participants with an understanding of their role in recommending and advocating for early screening and prompt treatment, and in some cases performing screening for complications
- To discuss the implications of monitoring and treating long-term complications
- To understand the psychological consequences of long-term complications for the individual and the family members
- To discuss the necessity of being honest and adopting a positive approach to the prevention and management of complications, and of not using scare tactics and threatening messages

Module III-7e

Sleep disorders

Overview

Snoring is an everyday occurrence for many people. However, for 1 in 50 adults, it becomes much worse, affecting the person's ability to work and increasing the risk of accidents. Obstructive sleep apnoea is characterized by multiple brief interruptions of breathing during sleep, despite continued inspiratory effort.

Sleep apnoea is more common in people who are overweight or obese.

People with sleep apnoea have a higher risk of cardiovascular disease as well as psychosocial problems.

Goals

- To understand the significance of being overweight and the risk of sleep apnoea
- To understand how obesity can lead to a narrowing in the upper airway structure due to an accumulation of subcutaneous or periluminal fat deposits on the pharynx, or fatty infiltration around the neck
- To understand the significance of sleep apnoea for risk factors for heart disease, such as hypertension, dangerous arrhythmias and decreased cardiac output
- To understand how reduced oxygen and increased carbon dioxide levels in the blood negatively impact pre-existing conditions such as chronic obstructive pulmonary disease (COPD)

Objectives

After completing this module the participant will be able to:

- State that sleep apnoea is a significant health problem in overweight and obese people
- Discuss the significance of a collar size greater than 43 cm
- Describe how snoring can progress to sleep apnoea when the throat muscles become so floppy during sleep that the airway behind the tongue collapses

- State why a person does not have a restful night's sleep even though he or she has not been awake during the night
- Discuss the relationship between sleep apnoea and working, driving or operating machinery during the day
- Describe the relationship between sleep apnoea and diabetes
- Discuss various ways of diagnosing sleep apnoea
- Discuss the importance of an assessment tool for diagnosing sleep apnoea
- Discuss sleep studies in diagnosing sleep apnoea
- Discuss various methods that were used to treat this problem in the past, such as being anaesthetized and having a tube inserted into the trachea
- Discuss non-invasive ventilation
- Discuss continuous positive airway pressure (CPAP)
- Discuss other treatments
- Discuss the importance of nutrition counselling for people with sleep apnoea
- Describe how weight loss and reducing alcohol intake can help
- Discuss research studies on sleep apnoea

Teaching strategies

Problem-based learning
Case study

Suggested time

30 minutes

Who should teach this module

Diabetes educator

Evaluation of learning

Design an assessment tool for diagnosing sleep apnoea

References

Foster G, Nonas C. *Managing obesity: a clinical guide*. American Dietetic Association. Washington, 2004.

IDF Task Force on Epidemiology and Prevention. *The IDF consensus statement on sleep apnoea and type 2 diabetes*. IDF. Brussels, 2008.

Tuomilehto H, Seppä J, Sahlman J on behalf of Kuopio Sleep Apnea Group. Weight reduction and life style intervention as a treatment of mild OSAS – A prospective and randomized study. *Sleep Med* 2006; 7(Suppl 2): S48.