DYSFUNCTION AND CLINICAL PICTURE IN PATIENTS WITH DIABETIC POLYNEUROPATHY

Amonova Zakhro Kakhramonovna, *PhD.,*
assistant of the Department of Neurology,
Samarkand State Medical University
Amonova Zilola Kahramonovna
2nd year student at the Faculty of Dentistry of the
European Medical University

Abstract: Diabetic peripheral neuropathy (DPN) refers to the development of peripheral nerve dysfunction in patients with diabetes when other causes are excluded. Diabetic distal symmetric polyneuropathy (DSPN) is the most representative form of DPN. As one of the most common complications of diabetes, its prevalence increases with the duration of diabetes. Diabetic polyneuropathy is a common complication of diabetes that affects the nerves, especially in the feet and legs. It is caused by prolonged exposure to high levels of glucose in the blood, which can damage nerves over time. The exact mechanism by which high blood sugar causes nerve damage is not fully understood, but it is believed to involve a combination of metabolic, vascular, and inflammatory factors.

Key words: diabetic peripheral neuropathy, molecular mechanisms, signal transduction, diabetic polyneuropathy, nerve, blood vessels, inflammation, blood, drugs, neuropathy.

Prevention of diabetic polyneuropathy primarily involves effective control of blood sugar levels. This can be achieved through a combination of medication, dietary control, regular exercise and monitoring of blood glucose levels. Maintaining a healthy lifestyle including a balanced diet, regular physical activity, and avoiding smoking and excessive alcohol consumption can help prevent or delay the onset of diabetic polyneuropathy. To prevent complications such as foot ulcers and infections that can worsen neuropathy Regular foot care is essential for people with diabetes. Proper foot hygiene, wearing comfortable shoes, and regular foot examinations are important preventative measures. Early detection of diabetic polyneuropathy through regular screening and evaluation is critical for timely intervention and treatment. Consulting health care providers for personal care and guidance on diabetes management can help people reduce their risk of developing diabetic polyneuropathy and its complications.[5].

Diabetic polyneuropathy is a common complication of diabetes that affects the nerves and causes symptoms such as numbness, tingling, and pain in the extremities.

Understanding its causes and taking preventive measures are essential to effectively manage this condition and improve the quality of life of people with diabetes. Diabetic polyneuropathy is primarily caused by prolonged exposure to high blood glucose levels. Over time, high blood sugar levels can damage the blood vessels that supply the nerves with oxygen and nutrients, leading to nerve damage. Chronic inflammation in the body, often seen in people with diabetes, contributes to nerve damage and worsening of diabetic polyneuropathy. High levels of glucose can cause nerve swelling, which leads to compression and damage. In some cases, the immune system can mistakenly attack nerves and cause nerve damage.[4]

Prevention of diabetic polyneuropathy involves effective diabetes management and adopting healthy lifestyle habits. Keeping blood sugar levels within the target range recommended by healthcare providers is essential in preventing nerve damage. This can be achieved through medication, diet, exercise, and regular monitoring. A balanced diet rich in fruits, vegetables, whole grains, and lean protein can help control blood sugar levels and reduce the risk of diabetic polyneuropathy. Physical activity improves circulation. Reduces inflammation and helps control blood sugar, all of which are beneficial in preventing diabetic polyneuropathy. Proper foot care is essential for diabetics to prevent foot ulcers and infections. Regular foot examinations, wearing comfortable shoes, and keeping feet clean and dry can help prevent complications. Regular visits to diabetes care providers and nerve function tests can help detect early signs of diabetic polyneuropathy and prevent its progression. Exercise plays a crucial role in the treatment of diabetes and the prevention of diabetic polyneuropathy. Although any form of physical activity can be beneficial, certain types of exercise are recommended for people with diabetes to improve circulation, control blood sugar, and reduce the risk of diabetic polyneuropathy. [3]

Aerobic exercise such as walking, running, cycling, swimming, or dancing is great for improving cardiovascular health, increasing blood flow, and improving insulin sensitivity. Aim for at least 150 minutes of moderate-intensity aerobic exercise per week. Strength training using weights or resistance bands can help build muscle mass, improve metabolism, and increase overall strength. Add strength training that targets major muscle groups at least two to three times a week. Stretching, yoga, or tai chi can improve flexibility, balance, and coordination, reducing the risk of falls and injuries. These exercises can help relieve stress and improve overall well-being. Low-impact activities such as swimming, water aerobics, or stationary cycling can reduce the risk of injury and provide gentle exercise for individuals with diabetic neuropathy or foot problems may be more appropriate. Interval training, which alternates between high-intensity exercise and rest or low-intensity exercise, can be effective in improving cardiovascular health, insulin sensitivity, and blood sugar control. Before beginning any exercise program, it is important that people with diabetes, especially those with

diabetic polyneuropathy, consult with their healthcare provider or a certified diabetes educator. They can provide personalized recommendations based on your individual health status, fitness level, and specific needs. Monitor blood sugar levels before, during, and after exercise to prevent hypoglycemia (low blood sugar) or hyperglycemia (high blood sugar) very important. Adjustments to medications, food intake, or exercise intensity may be made based on blood sugar levels.[2]

By incorporating aerobic, strength, flexibility, and balance exercises into their regular exercise routine, people with diabetes can improve their overall health, reduce their risk of diabetic polyneuropathy, and better manage their condition. Regular physical activity, along with proper nutrition and medical care, is important in preventing diabetes-related complications and promoting a healthy lifestyle. The key to preventing diabetic polyneuropathy is good blood sugar control, healthy is to adopt a healthy lifestyle, take proper care of the feet, and regularly consult and monitor the doctor. These measures can help people with diabetes reduce their risk of developing neuropathy and improve their overall quality of life.[1]

Conclusion:

Diabetic polyneuropathy is a serious complication of diabetes that can significantly affect the quality of life. By understanding the causes of diabetic polyneuropathy and implementing preventive measures such as blood sugar control, healthy lifestyle habits, foot care, and regular checkups, individuals with diabetes can reduce their risk of developing the condition and improve their overall well-being. It is important for individuals with diabetes to work closely with their health care providers to develop a comprehensive care plan tailored to their needs to prevent diabetic polyneuropathy and its complications.

References:

1. Ziegler D., Tesfaye S., Spallone V., Gurieva I., Al Kaabi J., Mankovsky B. et al. Screening, diagnosis and management of diabetic sensorimotor polyneuropathy in clinical practice: international expert consensus recommendations // Diabetes Res. Clin. Pract. 2022. Vol. 186. Article ID 109063. DOI: https://doi.org/10.1016/]. diabres.2021.109063[1]

2. Pop-Busui R., Ang L., Boulton A.J.M., Feldman E.L., Marcus R.L., Mizokami-Stout K., et al. Diagnosis and Treatment of Painful Diabetic Peripheral Neuropathy. Arlington, VA : American Diabetes Association, 2022. DOI: https://doi.org/10.2337/ db2022-01[2]

3. Ziegler D., Holz A., Gurieva I., Horvath V., Mankovsky B.N., Radulian G. et al. Current perspectives on prediabetic neuropathy // Diabetes, Stoffwechsel und Herz. 2021. Vol. 36, suppl. 1.[3]

4. Гурьева И.В. Диабетическая стопа. Патогенетическое обоснование междисциплинарного профилактического взаимодействия //

Междисциплинарная неврология. 2019. № 1. С. 24-31. URL: https://logospress.ru/journals/%D 0%BCeg-distsiplinarnaya-nevrologiya-%E 2%84%961-2019[4]

5. Pop-Busui R., Boulton A.J.M., Feldman E.L. et al. Diabetic neuropathy: a position statement by the American Diabetes Association // Diabetes Care. 2017. Vol. 40. P. 136-154. DOI: https://doi.org/10.2337/dc16-2042[5]