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Diagnosis and management of type 2 diabetes mellitus

Introduction

There are estimated to be around 3.3 million people with diabetes mellitus in the United Kingdom (UK), with a further 500,000 undiagnosed. By 2030, there could be as many as 5 million. This increase in prevalence is mainly due to the rise in obesity levels, and an aging population (Bannister 2016). Around 90% of those diagnosed with diabetes have type 2 diabetes (National Institute of Health and Care Excellence (NICE) 2015).

Type 2 diabetes is a chronic condition, characterised by resistance of the cells in the body to the action of insulin, and insufficient insulin production in the pancreas, both of which lead to hyperglycaemia (NICE 2015).

This essay will discuss the pathophysiology of type 2 diabetes, how diabetes is diagnosed, the available treatment options, and the nurse's role in diabetes management.

Pathophysiology

Glucose is the main source of energy for the cells in the body, and levels of glucose in the blood is usually regulated by a balance of the hormones insulin, and glucagon (Bannister 2016).

In normal physiology, when carbohydrates are eaten, they are digested, and broken down into glucose, which is then absorbed into the blood stream. In the pancreas are clusters of endocrine cells called the islets of Langerhans. These consist of alpha cells, which produce glucagon, and beta cells, which produce insulin. When the level of glucose in the blood is elevated after a meal, the beta cells are triggered to release insulin. Insulin binds with insulin receptors on skeletal muscle, adipose tissue, and liver cell membranes, and this allows glucose to move from the blood stream, into the cell to be used as energy, or stored as glycogen or fat (Bannister 2016).

When blood glucose levels fall, the alpha cells in the islets of Langerhans are triggered to release glucagon. Glucagon stimulates the liver to release glucose into the blood stream, thus raising blood glucose levels (Bannister 2016).

Type 2 diabetes develops due to impaired insulin secretion, inappropriate glucose production by the liver, or resistance to the actions of insulin in the cells, all of which contribute to hyperglycaemia. There may be a genetic component, and this can be exacerbated by lifestyle factors, such as obesity, and a sedentary lifestyle. Onset is usually slow, and the disease is progressive (Lippencot Williams & Wilkins 2010; Aslan 2015).

Chronic hyperglycaemia damages the blood vessels, and results in the long-term complications of diabetes, such as neuropathy, retinopathy, and nephropathy. People with diabetes also have a higher risk of developing cardiovascular disease, and cerebrovascular disease (WHO 2011).

Diagnosis

Type 2 diabetes often has no symptoms, and can go undetected for many years (Bannister 2016). Routine testing of non-symptomatic patients is not currently recommended in the UK, but there may be some benefit for certain patients, especially those who are overweight, or obese, and have additional risk factors, such as physical inactivity, cardiovascular disease, being over the age of 45 years, or having a relative with diabetes. This is because early detection, and treatment, can improve long term outcomes (Robertson 2012).

In 2011, the World Health Organisation (WHO) changed their recommendations, and now state that glycosylated haemoglobin (HbA1C) can be used for the

diagnosis of diabetes. This gives an average of plasma glucose levels over the past 8 to 12 weeks. However, they specify that a result below diagnostic range should not be used to exclude a diagnosis of diabetes, where other glucose test results are diagnostic (WHO 2011).

Diabetes can now be diagnosed using HbA1C, fasting plasma glucose, random plasma glucose, or the oral glucose tolerance test. Two results in the diagnostic range are required (Bannister 2016).

Treatment options

The aim of treatment for type 2 diabetes is to maintain blood glucose levels at 5 to 8mmol/l, and HbA1C at 48 to 59mmol/mol, with no problematic hypoglycaemia. This minimises the risk of both acute, and long-term complications (Bannister 2016). Decreasing HbA1C can significantly reduce risks of microvascular complications, and diabetes-associated death (Asante 2013).

The first stage of treatment should always be to provide a structured education programme. This ensures that people who are diagnosed with type 2 diabetes develop the knowledge, skills, and confidence, required to successfully self-manage their condition (NICE 2011). Part of this education should include diet, and lifestyle, advice, and this should underpin all aspects of treatment (Bannister 2016).

If diet, and lifestyle changes do not control blood glucose levels to an adequate level, the first line oral agent is Metformin. This should be commenced slowly, and gradually increased, to minimise the risk of gastrointestinal side effects (NICE 2015).

If HbA1C remains above 58mmol/mol on monotherapy, another oral agent, such as a sulphonylurea, should be introduced (NICE 2015).

If blood glucose levels continue to be elevated, a third oral agent can be added, or an injectable incretin mimic (Glucagon-like peptide 1) could be considered, if the patient is overweight or obese, and has obesity related medical, or psychological problems (NICE 2015; Bannister 2016).

50% of patients with type 2 diabetes will require insulin therapy within 10 years of diagnosis (Bannister 2016). Commencement of insulin therapy requires a structured approach, with ongoing support, and education (NICE 2015).

All aspects of diabetes management should be patient centred, and take an individualised approach, considering all aspects of the patient's life, such as occupation, comorbidities, lifestyle, preferences, and wishes (NICE 2015; Phillips 2016).

Nursing role

Nurses, especially practice nurses, are often the first health care professional that a patient sees following diagnosis of type 2 diabetes (Hollis, Glaister & Lapsley 2014).

The nurse has a crucial role in providing education, explaining rationale, side effects, and mode of action of medications, offering practical guidance, and improving patient adherence to treatment plans (Asante 2013; Bartol 2012).

However, nurses often lack the knowledge, and understanding, required to provide these aspects of care, especially in areas such as timing, and mode of action, of insulin, foot care, and driving regulations, so it is essential that nurses are given the education required to effectively care for diabetic patients (Hollis, Glaister & Lapsley 2014).

Nurses are well placed to work long-term with patients, to assist them to accept the changes brought about by the diagnosis of type 2 diabetes, and to ensure that all aspects of care are patient-centred, and focus on the patient's needs, wishes, preferences, and understanding (Keller-Senn, et al. 2015; Phillips 2016).

Conclusion

Type 2 diabetes is a complex condition, which has many aspects to its treatment, and management.

The nurse has a crucial role to play, especially in areas such as providing education, and ensuring patient-centred care.

References

- Asante, E. (2013). Interventions to promote treatment adherence in type 2 diabetes mellitus. *British Journal of Community Nursing*, 18(6), pp. 267-274.
- Aslan, D. (2015). Glucose homeostasis and pathogenesis of diabetes mellitus. In: Cornicelli, J., Peplow, P., Touyz, R.M., Adams, J., Kotchen, T., Young, T., Thurston, D., Murphy, R., Swick, A., Vickers, S., Menhaji-Klotz, E., Aslan, D., Coppell, K., Taheri, S., Head, G. & Stephens, J. eds. *Cardiovascular and metabolic disease*. Plymouth: NBN International, Ch.11.
- Bannister, M. (2016). Diabetes. In: Ashelford, S., Raynsford, J. & Taylor, V. *Pathophysiology and Pharmacology for Nursing Students*. London: Sage, Ch. 12.
- Bartol, T. (2012). **Improving the treatment experience for patients with type 2 diabetes: Role of the nurse practitioner**. *Journal of the American Academy of Nurse Practitioners*, 24, pp. 270-276.
- Hollis, M., Glaister, K. & Lapsley, J.A. (2014). Do practice nurses have the knowledge to provide diabetes self-management education? *Contemporary Nurse*, 46(2), pp. 234-241.
- Keller-Senn, A., Probst, S., Imhof, R.M. & Imhof, L. (2015). Nurse-led education programme enhancing foot care self-efficacy in high-risk diabetes population: pilot randomised controlled study. *International Diabetes Nursing*, 12, pp. 74-78.
- Lippencot Williams & Wilkins. (2010). *Professional guide to pathophysiology*. 3rd ed. London: Lippencot Williams & Wilkins.
- National Institute of Health and Care Excellence. (2011). *Diabetes in adults*. London: National Institute of Health and Care Excellence.
- National Institute of Health and Care Excellence. (2015). **Type 2 diabetes in adults: management**. London: National Institute of Health and Care Excellence.
- Phillips, A. (2016). **Optimising the person-centred management of type 2 diabetes**. *British Journal of Nursing*, 25(10), pp. 535-538.
- Robertson, C. (2012). The role of the nurse practitioner in the diagnosis and early management of type 2 diabetes. *Journal of the American Academy of Nurse Practitioners*, 24, pp. 225-233.
- World Health Organisation. (2011). **Use of glycosylated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus**. *Abbreviated report of a WHO consultation*. Geneva: World Health Organisation.

Bibliography

- Asante, E. (2013). Interventions to promote treatment adherence in type 2 diabetes mellitus. *British Journal of Community Nursing*, 18(6), pp. 267-274.
- Aslan, D. (2015). Glucose homeostasis and pathogenesis of diabetes mellitus. In: Cornicelli, J., Peplow, P., Touyz, R.M., Adams, J., Kotchen, T., Young, T., Thurston, D., Murphy, R., Swick, A., Vickers, S., Menhaji-Klotz, E., Aslan, D., Coppell, K., Taheri, S., Head, G. & Stephens, J. eds. *Cardiovascular and metabolic disease*. Plymouth: NBN International, Ch.11.
- Bannister, M. (2016). Diabetes. In: Ashelford, S., Raynsford, J. & Taylor, V. *Pathophysiology and Pharmacology for Nursing Students*. London: Sage, Ch. 12.

- Bartol, T. (2012). **Improving the treatment experience for patients with type 2 diabetes: Role of the nurse practitioner.** *Journal of the American Academy of Nurse Practitioners*, 24, pp. 270-276.
- Hollis, M., Glaister, K. & Lapsley, J.A. (2014). Do practice nurses have the knowledge to provide diabetes self-management education? *Contemporary Nurse*, 46(2), pp. 234-241.
- Huether, S. E. and McCance, K. L. (2012). *Understanding pathophysiology*. 5th ed. Missouri: Mosby.
- Keller-Senn, A., Probst, S., Imhof, R.M. & Imhof, L. (2015). Nurse-led education programme enhancing foot care self-efficacy in high-risk diabetes population: pilot randomised controlled study. *International Diabetes Nursing*, 12, pp. 74-78.
- Lippencot Williams & Wilkins. (2010). *Professional guide to pathophysiology*. 3rd ed. London: Lippencot Williams & Wilkins.
- Mudaliar, S. (2013). Choice of early treatment regimen and impact on β -cell preservation in type 2 diabetes. *International Journal of Clinical Practice*, 67(9), pp. 876-887.
- National Institute of Health and Care Excellence. (2011). *Diabetes in adults*. London: National Institute of Health and Care Excellence.
- National Institute of Health and Care Excellence. (2015). **Type 2 diabetes in adults: management.** London: National Institute of Health and Care Excellence.
- Philips, A. (2016). **Optimising the person-centred management of type 2 diabetes.** *British Journal of Nursing*, 25(10), pp. 535-538.
- Robertson, C. (2012). The role of the nurse practitioner in the diagnosis and early management of type 2 diabetes. *Journal of the American Academy of Nurse Practitioners*, 24, pp. 225-233.
- World Health Organisation. (2011). **Use of glycosylated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus. Abbreviated report of a WHO consultation.** Geneva: World Health Organisation