Management of diabetes in patients at the end of life


Summary

Diabetes is a complex metabolic disorder that is more common in patients with cancer than in the general population. The ethical dilemmas facing many healthcare professionals in the management of diabetes during the terminal phase of life include the timing of withholding or withdrawing treatment. Communication can also be difficult between healthcare professionals, patients and their families at this time. If the patient's preferences have not been discussed at an earlier stage in the illness trajectory, mismanagement of diabetes may occur. Local protocols on diabetes management at the end of life have been developed in some areas, but there are no national or standardised guidelines. This can result in fragmented care. This article explores the need for better communication and the development of national guidelines so that the quality of end of life care for patients with diabetes can be improved.

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DIABETES IS A chronic and progressive disease. It affects 2.2 million people in the UK. Ten per cent of the population over the age of 65 years have diabetes, and an increasing number of people remain undetected (Department of Health (DH) 2010). It is suggested that by 2025 over four million people in the UK will have diabetes (Diabetes UK 2010). Recent studies have examined cancer incidence and diabetes. People with diabetes, mainly type 2 diabetes, are at increased risk of developing certain types of cancer, in particular those of the pancreas, endometrium, colon and liver (Psarakis 2006, Helmholtz Association of German Research Centres 2010). Although the reason for this remains unclear, it could be linked to shared risk factors between these two diseases such as obesity, age, diet and reduced activity (American Cancer Society 2010). The use of glucocorticoid therapy to treat some patients with cancer can cause diabetes. This is known as steroid-induced diabetes (Psarakis 2006). With the prevalence of type 2 diabetes increasing, and the risk of one in three people developing some form of cancer (Cancer Research UK 2009), more nurses will be caring for patients with diabetes at the end of life.

The management of diabetes towards the end of life continues to be a challenge for many healthcare professionals. It is often ‘the varying length of the terminal phase’ that make clinical decision making for these patients complex (Ford-Dunn et al 2006).

The aim of this article is to increase nurses’ knowledge and awareness of caring for and meeting the needs of palliative care patients with diabetes during their last few days of life.

Liverpool Care Pathway

The Liverpool Care Pathway provides an evidence-based framework that supports excellence in holistic care for dying patients in the last few days of life (Jack et al 2003). It offers guidance to healthcare professionals on the diverse aspects of care, including the communicative, psychological and spiritual needs of the dying patient and his or her family.

In the trust where the author works, the pathway can be initiated by a member of the multidisciplinary team caring for the patient. Other trusts that use the pathway follow the same procedure. The criteria for entering the Liverpool Care Pathway must include two of the following: the patient is only able to take sips of fluid, is bed bound, is semi-comatose and is no longer able to take tablets (Glare et al 2003). The question: ‘Would you be surprised if the patient died in the next five to seven days’ is also considered. If the answer to this is ‘no’, then a discussion is held between members of the multidisciplinary team, the patient and his or her family, about
the best supportive care for the individual (Glare et al 2003).

Comfort and dignity are paramount for any dying patient. The Liverpool Care Pathway supports this and ensures that patients are pain free, have their psychological and spiritual needs addressed and any unnecessary interventions are withdrawn. However, Ellershaw (2002) claimed that the pathway can appear too ‘rigid to facilitate’ the holistic approach recognised in palliative care. Conversely, it is apparent that variation is needed when managing diabetes in the care of dying patients (Knox 2007). It has been suggested that if the pathway is to be individualised for patients it should be ‘tailored according to their condition and needs’ (McNicholl et al 2006).

**Palliative care**

Palliative care has been defined as ‘an approach that improves the quality of life for patients and their families facing the problem associated with life-threatening illness through the prevention and relief of suffering’ (World Health Organization (WHO) 2010). This is achieved by means of early identification and assessment and treatment of pain, and physical, psychological and spiritual problems. For some healthcare professionals, the management of end-stage diabetes can be particularly complex (McCoubrie et al 2005).

It is more difficult to assess the disease trajectory of non-cancer patients because the continual treatment needs are different, even though the psychological support required at the end of life is similar to that of patients with cancer (Ellershaw and Ward 2003, Murray et al 2005).

According to the British Medical Association (BMA) (2007), providing ‘good quality palliative care’ is the main perspective for decisions made regarding treatment. Decisions made in relation to withdrawing or withholding treatment should be underpinned by the principles of beneficence (to do good) and non-maleficence (to do no harm) (BMA 2007). For patients with diabetes in the last few days of life, the benefit of providing treatment is to maintain stable blood glucose levels for each individual patient. The aim is to prevent the uncomfortable effects of hypoglycaemia or hyperglycaemia. Withdrawing insulin treatment from a patient with type 2 diabetes in the last few days of life could be perceived as non-maleficence, but it could also be argued that insulin therapy is one of the ‘facets of basic care’ (BMA 2007).

A study carried out by Ford-Dunn et al (2006) indicated that when oral hypoglycaemic medications are discontinued in dying patients with type 2 diabetes, their blood glucose levels do not rise and so medications can be stopped safely. Similarly, Poulson (1997) and Usbourne and Wilding (2003) claimed that when the patient is near death and unconscious, insulin and blood glucose monitoring could be withdrawn as the patient is unlikely to experience hyperglycaemia. This may be because patients with type 2 diabetes that are not eating and have lost weight may have residual endogenous insulin.

**Types of diabetes**

**Type 1 diabetes** For those diagnosed with type 1 diabetes insulin is required to prevent acute complications and maintain life. Insufficient insulin or its withdrawal may result in hyperglycaemia and the rapid development, for many, of diabetic ketoacidosis (Knox 2007). Patients with diabetic ketoacidosis have very high blood glucose levels. Although ketoacidosis generally occurs when blood glucose levels are high, it can also occur in patients with lower levels. Symptoms include nausea, vomiting and acidic respirations. It is important, therefore, to continue insulin treatment (Bilous and Donnelly 2010).

**Type 2 diabetes** Some individuals with type 2 diabetes can be managed with diet and/or oral hypoglycaemic medication. However, many people with type 2 diabetes will need insulin as the disease trajectory progresses (Royal College of Nursing 2004). Persistent hyperglycaemia in people with type 2 diabetes can lead to severe dehydration which, if left untreated, may result in hyperosmolar hyperglycaemic state. This condition is defined by extremely high blood glucose levels (often greater than 40mmol/l), hyperosmolality and hypernatraemia (some patients with type 2 diabetes are also at risk of developing ketones) (Diabetes UK 2009). In this situation, it is not the risk of long-term complications that directs treatment, but acute complications such as polydipsia, polyuria, nausea, thrush and disorientation, which could severely affect the patient’s quality of life (Ford-Dunn et al 2006, Diabetes UK 2009).

**Steroid-induced diabetes** Patients with cancer are often commenced on glucocorticoid treatment to assist in the management of their condition. Some patients receiving this treatment do not have a diagnosis of diabetes, but may have impaired fasting glucose or impaired glucose intolerance. Impaired fasting glucose describes an overnight fasting blood glucose level greater than 6.1mmol/l. Impaired glucose intolerance is diagnosed following an oral glucose tolerance test. Following a fasting plasma glucose test, patients are given 75g of glucose to drink. Their venous plasma glucose is monitored again two hours later and if their levels are between 7.8 and 11.0mmol/l they are diagnosed with impaired glucose intolerance (WHO 2006). When patients with impaired fasting glucose or impaired glucose intolerance are commenced on glucocorticoids their glycaemic levels may
raise above the diagnostic criteria for diabetes (steroid-induced diabetes) (Box 1). These patients often require insulin to control their blood glucose levels.

**Hypoglycaemia**

Hypoglycaemia can affect any individual receiving treatment for diabetes (Dromgoole 2005). It can alter the person’s mental state and may be difficult to treat in the last few days of life because of anorexia and reduced oral intake (Smyth and Smyth 2005). For patients with diabetes receiving palliative care, episodes of hypoglycaemia can impair their quality of life, cause increased confusion and decrease the time spent with their families (Poulson 1997). Throughout the diabetes trajectory, individuals are encouraged to follow a healthy diet and maintain strict blood glucose control. For many, preprandial blood glucose levels of 4.0-7.0mmol/l are optimal levels to reduce long-term risk (UK Prospective Diabetes Study Group 1998). Oral hypoglycaemic medication can be stopped in patients with type 2 diabetes, and patients whose blood glucose is being treated with two or more insulin injections may have this dose reduced to daily injections (Ford-Dunn et al 2006).

Blood glucose monitoring is an essential component in the day-to-day management of diabetes for many patients (Ford-Dunn et al 2004). If this procedure is discontinued this may be viewed by the patient and family as failure to provide holistic care (Ellershaw and Wilkinson 2003). However, continuing to monitor blood glucose levels as the patient’s condition deteriorates becomes problematic. This is because opinion among many healthcare professionals regarding what is an acceptable level of blood glucose monitoring in the management of diabetes during the last few days of life varies (McCoubrie et al 2005).

Many healthcare professionals feel that once people are entered on to the Liverpool Care Pathway, blood glucose monitoring is discontinued as it is an invasive procedure. For many people with diabetes and their families, blood glucose monitoring is part of their everyday lives and something they see as an essential part of their care. If the patient agrees, daily blood glucose monitoring is acceptable at this time.

Communication needs to take place between healthcare professionals, the patient and family members, and the patient’s preferences and perceptions should be documented while he or she is still able to express them (Knox 2007).

**Barriers to communication**

A fundamental component of good palliative care is effective communication between patients, families and healthcare professionals (Buckman 1996). Evidence suggests that the transition from curative to palliative care during the illness trajectory can be a stressful time for patients (Randall and Wearn 2005). Healthcare professionals need to consider the timing of the discussion about how to manage the patient’s diabetes at the end of life, the environment in which it takes place and the emotional effect this may have on the patient and family members (Schofield et al 2006). These aspects of communication should also be considered when patients move from palliative to terminal care.

Discussion of the reasons why healthcare professionals find it difficult to break bad news was reported by Franks (1997) who stated that breaking bad news was perceived as not only causing distress to the patient, but also as causing anguish to staff because they are unable to make things better. Franks (1997) recognised that although healthcare professionals have a ‘moral, ethical and legal duty’ to provide information to patients, some patients did not want to be actively involved in decision making about end of life care.

In addition, Faulkner and Maguire (1994) claimed that because of communication barriers, some patients were unable to discuss their psychological problems. This was supported by Heaven and Maguire (1997) who reported that patients find it easier to address their physical concerns rather than their psychological issues. An open and honest approach is required to ensure good communication and an understanding of the patient’s views and preferences at the end of life (BMA 2007).

**BOX 1**

**Diagnostic criteria for diabetes**

- **Venous plasma glucose level:**
  - Normal fasting: <6mmol/l.
  - Impaired fasting: 6.1-6.9mmol/l.
  - Diabetes: 7mmol/l or above.

(World Health Organization 2006)
Fallowfield et al (2002) found that doctors who are uncomfortable with communicating and addressing the significance of withdrawing or withholding treatments with patients may deny them the opportunity to say their final goodbyes. Dunne (2005) suggested that nurses need to use skills such as 'active listening, open-ended questions, reflection of feeling and empathy building' when communicating with terminally ill patients.

It is evident that the ethical decision to withdraw treatment from patients with diabetes in the last few days of life can have a psychological effect not only on patients and their families, but also on the nurses involved in their care. These feelings may be exacerbated by the slower decline of patients' illness trajectory and the unpredictability of the complications associated with diabetes (National Council for Palliative Care 2006). Listening to and acting on the concerns, needs and values of patients and their families are imperative to providing patient-centred and holistic care (NHS National End of Life Care Programme 2010).

**National clinical guidelines**

Guidelines are tools that endorse evidence-based practice with the aim of improving patient care and outcomes (Richens et al 2004). Following an extensive review of the literature using electronic databases, it would appear there are only a few published guidelines on the management of diabetes at the end of life. Guidelines have now been published in Walsall (NHS Walsall 2010). The information available is based on clinical experience rather than evidence-based research. These findings concur with Ford-Dunn et al (2006), who found that there was no evidence-based guidance available to assist clinical decision making in the palliative care of patients with diabetes. This is despite the use of the ‘National Service Frameworks for chronic diseases as an integrated part of healthcare for cancer and non-cancer patients’ (Ellershaw and Murphy 2005).

Although there is evidence that people with type 1 and type 2 diabetes are at higher risk of developing certain cancers (Psarakis 2006), glucocorticoid treatment in patients with cancer can also induce diabetes (Poulson 1997). Therefore, to prevent and alleviate potential problems, it is essential to provide staff and patients with clarification on the management of diabetes in the last few days of life by introducing standardised guidelines.

When caring for patients at the end of life, the goal is to reduce clinical investigations and unnecessary treatments, maintaining the patient’s comfort and dignity. Quinn et al (2006) reported that the lack of understanding about the patient’s specific type of diabetes may lead to inconsistency and inappropriate management at the end of life. The Liverpool Care Pathway should also be considered when guidelines are being developed as it describes the process and expected outcomes of care delivery at the end of life. A variance in the Liverpool Care Pathway is reported when outcomes are not achieved (Ellershaw 2002). The variances, which could include blood glucose monitoring or insulin injections, could then be audited to ascertain the clinical effectiveness of the national clinical guidelines and identify areas for education (Muir-Gray 2001).

**Conclusion**

Multidisciplinary team working is essential if healthcare professionals are to provide individualised care, which is ethically permissible for patients with diabetes at the end of life. It is evident that without adequate guidance and effective communication there is a risk that healthcare professionals will continue to provide fragmented care for these patients.

The management of diabetes at the end of life continues to be a challenge for healthcare professionals. While effective communication has been shown to be an essential component in providing holistic care, some healthcare professionals continue to experience difficulties in discussing the issues associated with withdrawing or withholding treatments.

Although it appears that stopping oral hypoglycaemic medication in patients with type 2 diabetes has no adverse effects, it remains unclear whether it is safe to withdraw insulin treatment from this group of patients in the terminal phase of life. Therefore, it is essential to ensure that deterioration in the patient’s condition is not caused by diabetes. Consequently, knowledge of the different classifications of diabetes is critical when managing this condition at the end of life.

The Liverpool Care Pathway is an important document supporting excellence in holistic care. However, healthcare professionals need to be aware that it may need modifying when providing end of life care for patients with diabetes to avoid too many variances.

With the lack of guidance to support withdrawal of diabetes treatment, there is a need for the development of national clinical guidelines. They would provide standardised options for clinicians on the management of diabetes at the end of life. Through discussion and education, healthcare professionals would be able to develop their knowledge.
skills and knowledge, and improve their confidence in providing an individualised patient-centred approach to diabetes at the end of life. Healthcare professionals need to ensure the care they provide is not only ethically justified, but also meets the holistic needs of the patient and family members. If specialist diabetes and palliative care teams work collaboratively to develop national guidelines, this will help to create sustainable models of service delivery and provide an evidence base for diabetes care at the end of life.

References


