Diabetes and End of Life Care

Articles of interest

**Title:** A case control study of use of the Failed Access Score for determination of failed access to structured diabetes care: The WICKED project

**Citation:** Practical Diabetes, 2014, vol./is. 31/3(107-110), **Author(s):** Gillani S.M.R.,

**Abstract:** Failure of access to structured diabetes care is associated with adverse outcome. There is no known validated data tool to identify access failure and thus we have developed a Failed Access Score (FAS) and have examined its associations. The FAS is part of the WICKED project (Wolverhampton Interface Care, Knowledge Empowered Diabetes), and consists of three key care processes in diabetes: namely HbA1c, urinary albumin:creatinine ratio and retinal screening. A retrospective case control study in a single GP practice was undertaken on all the patients (n=478) failing two or more parameters over 15 months. They were compared to those with no access failure matched for age, gender, ethnicity and type of diabetes. Among the 51 cases with a FAS >2, two or three process measures were absent in 84% and 16% respectively. Excluding service failure, this was due to non-attendance in 35% but otherwise associated with other clinical constraints in 41% (mental health, house bound, palliative care, multi-morbidity) and their deprivation index was significantly higher (p<0.01). Extrapolating to the whole health economy (n=16 644), 2362 (14%) would have a FAS of >2 of whom 968 (6%) would have failed access in association with these constraints. In conclusion, it is possible to identify people who are failing access to structured diabetes care using readily available data calculated as the FAS score. Failed access is not usually due to patient default or disengagement but rather, in almost 65%, either due to significant clinical disadvantage or pure failure of service.

**Title:** A shared treatment decision-making approach between patients with chronic conditions and their clinicians: The case of diabetes

**Citation:** Health Expectations, 2006, vol./is. 9/1(25-36), **Author(s):** Montori V.M.,

**Abstract:** In this paper, we discuss the Charles et al. approach to shared treatment decision-making (STDM) as applied to patients with chronic conditions and their clinicians. We perceive differences between the type of treatment decisions (e.g. end-of-life care, surgical treatment of cancer) that generated existing approaches of shared decision-making for acute care conditions (including the Charles et al. model) and the treatment decisions that patients with chronic conditions need to make and revisit on an ongoing basis. For instance, treatment decisions in the chronic care setting are more likely to require a more active patient role in carrying out the decision and to offer a longer window of opportunity to make decisions and to revisit and reverse them without important loss than acute care decisions. The latter may require minimal patient participation to realize, are often urgent, and may be irreversible. Given these differences, we explore the applicability of the Charles et al. model of STDM in the chronic care context, especially chronic care that relies heavily on patient self-management (e.g. diabetes). To apply the Charles et al. model in this clinical context, we suggest the need to emphasize the patient-clinician relationship as one of partners in making difficult treatment choices and to add a new component to the shared decision-making approach: the need for an ongoing partnership between the clinical team (not just the clinician) and the patient. In the last section of the paper, we explore potential healthcare system barriers to STDM in chronic care delivery. Throughout the discussion we identify areas for further research.
The goal of the approach is to address individual patient needs, provide guidance for patients and caregivers, and ultimately maximize outcomes for patients with diabetes in the palliative care setting.

**Title:** An emerging theme in diabetes care: End of life.

**Abstract:** Hospice and palliative medicine practitioners frequently encounter diabetes and associated complications as comorbidities in end-of-life patients. As the patient with diabetes approaches end-of-life, there comes a time when tight glycemic control can not only prove of questionable benefit, but has the potential to cause harm. The medical literature offers little guidance on managing these complications appropriately. This article identifies three distinct classifications of patients with diabetes approaching the ends of their lives due to advanced illnesses. The authors propose a specific framework to guide management in patients with diabetes and advanced disease who are relatively stable, experiencing impending death or organ failure, or actively dying. The authors provide comprehensive information on commonly used diabetic medications, with necessary considerations and dose adjustments for these populations. The goal of the approach is to address individual patient needs, provide guidance for patients and caregivers, and ultimately maximize outcomes for patients with diabetes in the palliative care setting.

**Title:** An audit review of end-of-life care for in-patients with diabetes.

**Abstract:** Evaluation of end-of-life care for diabetes inpatients. Findings from a medical notes audit of dying patients concerning their diabetic characteristics, self-advocacy potential, and capillary blood glucose monitoring and glycaemic treatment withdrawal, are discussed, including the implications of monitoring and treatment withdrawal for patient end-of-life comfort, and issues surrounding self or other patient advocacy in such end-of-life decision-making.

**Title:** Auditing diabetes management at the end of life amongst teaching hospital inpatients.

**Abstract:** The prevalence of diabetes in our inner city teaching hospital is 19.2%, higher than the average for England of 15.7% (NaDIA 2013). Diabetes management in dying inpatients was audited against the national guideline 'End of Life Diabetes Care' (Diabetes UK, 2013). Methods: Adult deaths over 3 months were identified from palliative care records and retrospectively audited using electronic patient records. Intensive care unit (ITU) deaths were excluded (six patients). Results: Of 114 adult deaths (including ITU), 29 patients (25.4%) had diabetes. After excluding ITU deaths, 23 patients (21.3%) had diabetes. Of the 23 patients (six cancer deaths, 17 non-malignant deaths) all had Type 2 diabetes: 11 diet controlled, four on oral hypoglycaemics (three on metformin, one on a sulphonylurea), six on insulin, two on oral hypoglycaemics combined with insulin. Four (17.4%) were on steroids. Eight of 23 (34.8%) patients had a plan for diabetes management at the end of life. Capillary blood glucose (CBG) monitoring was as per guideline in eight patients (34.8%). Two (8.7%) patients had a CBG <3.5 mmol/l (local definition of hypoglycaemia) and eight (34.8%) patients had a CBG <6.0 mmol/l (guideline definition of hypoglycaemia). Three patients (13.0%) had hyperglycaemia (guideline definition CBG >15 mmol/l). Conclusions: Diabetes is a comorbidity in nearly a quarter of anticipated adult deaths and complications such as hypoglycaemia occurred in some, suggesting the need to plan diabetes management at the end of life. We plan to introduce an end of life glucose monitoring proforma, enabling early identification of at risk patients.
Title: Corticosteroid-Induced Diabetes in Palliative Care.
Citation: Journal of Palliative Medicine, 2012, vol./is. 15/6(681-689), Author(s): Pilkey, J
Abstract: Background: Corticosteroids are one of the most commonly used medications in palliative care. Although the benefit of corticosteroids generally outweighs the risk in the palliative population, side effects are common and necessitate careful consideration prior to prescribing. In March of 2010, a guideline for monitoring blood glucose values was implemented as part of our standard care within our two inpatient tertiary palliative care units. Method: A retrospective study was conducted, the aim of which was twofold. First, we hoped to determine a prevalence rate for steroid-induced diabetes mellitus (SDM) in palliative care and whether or not screening glucose levels twice weekly was appropriate or required. Second, we wanted to determine if possible predictors existed for the development of SDM in a palliative population, thereby identifying the patients most at risk who would benefit from ongoing glucose monitoring. Results and discussion: We found that SDM is more common in palliative care patients than previously thought. Our study showed a higher likelihood of developing hyperglycaemia with higher doses of dexamethasone. But although dose is correlated with hyperglycemia, patients without high doses were also at risk. Further study is currently underway with slight modifications to the guideline to more accurately assess the physical burden, as well as the emotional and financial cost of a hyperglycaemia screening protocol.

Title: Death, dying and diabetes: The importance of providing condition-specific end-of-life care
Citation: Journal of Diabetes Nursing, 2014, vol 18, no. 8, p 308-316, Author: James, J
Abstract: Approximately 500000 people die in England each year and of these, about 75000 people will have diabetes. People with diabetes will have a unique set of care needs during the last year, months and days of life, so appropriate management of diabetes with agreed actions by individuals and their families is important. The Liverpool Care Pathway was developed over a decade ago and, although it was quickly adopted by many hospital trusts and community teams, it is now being withdrawn in the UK due to concerns over financial incentives associated with the pathway, as well as negative media coverage. The emphasis is now to develop condition-specific guidance and this article discusses the new consensus guidance for end-of-life care for people with diabetes.

Title: Developing clinical guidelines for end-of-life care: blending evidence and consensus.
Citation: Int Journal of Palliative Nursing, 2012, vol. 18, no. 8, p. 397-405, Author: Dunning, T,
Abstract: Developing clinical practice guidelines (CPGs) is challenging, particularly in areas that are difficult to research such as end-of-life care. To describe the process that staff in a large regional health-care service in Victoria, Australia, used to develop CPGs for managing diabetes at the end of life. An interdisciplinary advisory group was appointed, a structured literature review undertaken, personal illness accounts sourced, and a guiding philosophy formulated. Individual interviews were conducted with people with diabetes and their carers. Formative and summative evaluation was undertaken. No level I or II evidence was identified. The interviews yielded important information about how people wanted their diabetes managed. Formative evaluation enabled stakeholders to participate in developing the CPGs. The summative evaluation confirmed the CPGs are easy to use and appropriate to clinical staff. The CPG development process yielded the best current evidence on which to base care plans and person-centred CPGs.

Title: Development of cross-boundary guidelines for the management of diabetes in palliative care and at end of life
Citation: Diabetic Medicine, 2011, vol./is. 28(141), Author(s): Bentley J., Bell R,
Abstract: Aims: The principles of palliative care should apply to patients early in the condition leading to death. Management of coexisting diabetes is an increasing feature of palliative and end-of-life care reflecting increasing prevalence and an ageing population, requiring a coordinated approach from professional teams across primary and secondary care to assist patients and carers and allow maintained independence. Methods: Working together the diabetes and palliative care specialist teams with general practitioner (GP) input developed draft combined clinical guidelines based on existing national evidence and guidance for both specialties. The draft patient focused document took into account service provision recommendations and local existing services, with the aims of addressing skills gaps in non-specialist teams and introducing standardised working practices across care boundaries. The months leading to death are discussed to complement primary care use of palliative care registers and facilitate forward care planning. End-of-life recommendations complement the Liverpool Pathway which is widely used locally. Our final document was agreed in consultation with a group of professional stakeholders including palliative care link nurses based in the acute trust and in the community, Macmillan and hospice nurses, district nurses, local pharmacy advisors and local GPs using focus groups and learning events to gather feedback and challenge workability of the various algorithms. Conclusion: The guidance has been adopted across Teesside in two acute trusts and the three local hospices with plans to roll into neighbouring areas in keeping with the distribution of local cancer care networks. This will lead to improved access to optimal, coordinated care for patients with diabetes as they approach the end of life.
Title: Diabetes Management in End of Life: A Preliminary Report Stemming From Clinical Experience.
Citation: Am J of Hospice & Palliative Care, 2015, vol 32, no 6 p 588-593, Author: Dionisio, R.
Abstract: The increasing coexistence of cancer and diabetes within the elderly population requires specific palliative care skills on diabetes treatment. We report our experience of diabetes management in a palliative care setting. In our retrospective 3-year activity sample (n = 563), 27.2% of patients have a diagnosis of diabetes mellitus: 80% have cancer whereas 20% have a main diagnosis of other severe chronic diseases. As to the presence/absence of diabetes, no differences emerge in the examined clinical indicators and global survival, with the exception of body mass index and days of hospitalization. At lifetime analysis, Barthel index and palliative prognostic index are the only parameters significantly related to death. Even if diabetes seems not to modify the prognosis, it significantly influences the health care burden and the team engagement.

Title: Diabetes and end of life: Ethical and methodological issues in gathering evidence to guide care
Citation: Scandinavian J of Caring Sciences, 2013, vol./is. 27/1(203-211), Author: Dunning T.
Abstract: Introduction: Providing palliative care for people with diabetes at the end of life is part of the chronic disease care trajectory, but end of life care is complex and the presence of diabetes further complicates management. Aim: The aim of the paper is to discuss the ethical and methodological issues encountered when undertaking research to develop guidelines for managing diabetes at the end of life and the strategies used to address the issues. Method: The issues emerged as we developed guidelines for managing diabetes at the end of life, which included conducting individual interviews with 14 people with diabetes requiring palliative care and 10 family members. A reflexive researcher journal was maintained throughout the guideline development process. The interview transcripts and researcher's journal were analysed to determine key methodological, ethical and researcher-related issues. Findings: Key themes were vulnerability of the sampling population, methodological issues included recruiting participants and ensuring rigor, ethical issues concerned benefit and risk, justice, autonomy, privacy, professional boundaries and informed consent. Researcher-related issues were identified such as managing participant distress and their own emotional distress. People were willing to discuss end of life diabetes management preferences. Conclusions: Undertaking research with people at the end of life is complex because of their vulnerability and the ethical issues involved. However, the ethical principles of autonomy and justice apply and people should be given the relevant information and opportunity to decide whether to participate or not.

Title: Diabetes care for older people: a practical view on management.
Citation: Diabetes & Primary Care, 2011, vol./is. 13/1(29-38), Author: Sinclair, Alan
Abstract: Diabetes can impose a substantial health burden on older people and their informal carers. If there is evidence of sub-optimal care planning, a lack of empowerment, or under-skilling of those delivering direct diabetes care to this group, independence of the individual will be under threat. This substantially increases the risk of a serious adverse outcome, for example hospital or care home admission. This article identifies the specific needs, treatments and assessments for functional loss and depression in older people with diabetes living in the community, those living in care homes and those in hospital. It also looks at end-of-life care and managing hypoglycaemia.

Title: Diabetes management in palliative care
Citation: Australian Nursing Journal, 2006, vol./is. 13/8(29), 1320-3185, Author(s): Quinn K.

Title: Diabetes management in patients receiving palliative care.
Citation: J Pain and Symptom Management, 2006, vol 32, no 3, p 275-286, Author: Quinn, K.
Abstract: Quantitative and qualitative research exploring how palliative care professionals, endocrinologists and diabetes nurse specialists managed diabetes in palliative care cancer patients. Themes included the need for practice guidelines, different illness stages, types of diabetes, communicating with patients and families, and participants' perceptions of their end-of-life diabetes management experience.

Title: Diabetes management... Treating diabetes mellitus in palliative care patients.
Citation: European Journal of Palliative Care, 2004, 11/1(12-12), Author: Blackburn D

Title: Diabetic patients in a palliative care setting: Analogous outcome than non-diabetics but more resources required
Citation: Italian Journal of Medicine, 2013, vol./is. 7(44-45), Author(s): Dionisio R.,
Abstract: Background and purpose of the study: Limited information is available regarding prevalence of diabetes and its absorption of resources in palliative care setting. Aim of the study: to analyze patients' features in three years activity in a Palliative Care Unit, focusing on the diabetic cohort. Materials and Methods: We retrospectively analyzed data from 563 patients consecutively admitted to our Palliative Care Unit. As to the whole sample age, sex, Performance Status, main diagnosis, prognostic index, pain, duration of hospital stay, global survival, number of admissions were considered; moreover type of diabetes and average blood glucose in diabetics only were collected. Diabetic vs non diabetic group data were analyzed and differences in diabetics as to average blood glucose (controlled vs uncontrolled) were considered. Results: 27% of patients
were diabetics (n=157), 80% with cancer and 20% with other chronic disabling diseases. Between the 2 groups no significant differences in terms of pain, Performance Status or survival emerged. The only significant differences were that diabetic patients had more hospitalization days and a greater propensity to re-admissions than non-diabetics. As to days of survival patients with controlled vs uncontrolled diabetes did not differ. Conclusions: Even if diabetics and non-diabetics in Palliative Care have an analogous outcome, diabetic patients may require greater resources in terms of health care team work load.

**Title:** End-of-life care in Black and White: race matters for medical care of dying patients and their families.

**Citation:** J American Geriatrics Society, 2005, vol./is. 53/7(1154-1161), **Author(s):** Welch LC,

**Abstract:** Objectives: To evaluate the effect of blood pressure (BP) and diabetes mellitus (DM) on cognitive and physical performance in older, independent-living adults., Design: Longitudinal study with secondary data analysis from the Advanced Cognitive Training for Independent and Vital Elderly randomized intervention trial., Setting: Six field sites in the United States., Participants: Two thousand eight hundred two independent-living subjects aged 65 to 94., Measurements: Cognitive functions in different domains and physical functions measured using activities of daily living, instrumental activities of daily living (IADLs), and the physical function subscale from the Medical Outcomes Study Short Form-36 (SF-36) Health Survey., Results: After the first annual examination, hypertension was associated with a faster decline in performance on logical reasoning tasks (ability to solve problems following a serial pattern), whereas DM was associated with accelerated decline on the Digit Symbol Substitution Test (speed of processing). The reasoning and Digit Symbol Substitution test are executive function tasks thought to be related to frontal-lobe function. Hypertension and DM were associated with a significantly faster pace of decline on the SF-36 physical component score. Individuals with DM had a faster pace of decline in IADL functioning than non-diabetic subjects. There was no evidence for an interaction between BP and DM on cognitive or physical function decline. Conclusion: Hypertension and DM are associated with accelerated decline in executive measures and physical function in independent-living elderly subjects. Further research is needed to determine whether cardiovascular risk modification ameliorates cognitive and functional decline in elderly people.

**Title:** End-of-life care: Anything but a pathway.

**Citation:** Diabetes & Primary Care, 2013, vol./is. 15/6(292-297), **Author:** James, June

**Abstract:** Benjamin Franklin wrote in a letter to Jean-Baptiste Leroy, in 1789, that: "In this world nothing can be said to be certain, except death and taxes." As individuals in modern society we may be comfortable with talking about taxes, but the subject of death may be one that healthcare professionals are not so happy to address with patients. Every year, there are about 500000 deaths in England alone and most of these follow a period of chronic illness such as heart disease, cancer or stroke. Seventy per cent of all deaths occur in people aged 70 years or more, while 58% of deaths occur in hospital, 18% at home, 17% in care homes, and 7% in other settings. Accurate death certification data where diabetes is a contributory factor are not available, but it is estimated that up to 75000 people with diabetes die annually in England, and therefore the appropriate management of diabetes with agreed actions by individuals and their families is of great importance. People with diabetes have a unique set of care needs during the last year, months and days of life. Until now there has been little guidance on the specific needs of people with diabetes at this time.

**Title:** End-of-life care: The really big questions

**Citation:** Journal of Diabetes Nursing, 2014, vol. 18, no. 10, p. 394., **Author:** James, J

**Abstract:** Comment on the importance of using appropriate HbA1c targets when caring for older people with diabetes, including those with dementia, and the dying. Recent guidance on the care of older people with type 2 diabetes, which includes specific glycaemic targets for patients with comorbidities, is discussed.

**Title:** Focus. Palliative care and oncology/education: diabetes management in palliative care.

**Citation:** Australian Nursing Journal, 2006, vol./is. 13/8(29-29), **Author(s):** Quinn K,

**Title:** GPs ‘ patient care in the last phase of the life - Results of a retrospective study

**Citation:** Europ Journal of General Practice, 2012, vol./is. 18/3(170-171), **Author(s):** Gagyro I

**Abstract:** Background: Although general practitioners (GPs) are considered to be a cornerstone of outpatient palliative care, little is known about the healthcare provided by GPs to patients in their last phase of life. Research Question: The aim was investigate end of live care from the GP’s point of view. Method: In a retrospective study in 30 general practices, data from all patients who died within the last 12 months were collected with a self-developed questionnaire. The focus was on diagnoses, symptoms and GP involvement in the last 12 months of life. Results: A total of 452 deceased patients, mean age 81 years (IQR 71
In the last 48h of the life, 48% had a GP involved in their end of life care, even though the largest proportion (40%) died in a hospital. The spectrum of the diseases was broad including chronic heart failure (42%), tumour diseases (36%), dementia (30%), cerebrovascular diseases (29%), diabetes (27%) and pulmonary diseases (27%) among others. Most common symptoms were weakness (62%), pain (45%), dyspnoea (37%), disorientation (31%), vomiting (20%) and anxiety (18%). For symptom control, sedatives (57%) and opiates (45%) were mostly given. Only 10% of patients received additional palliative care. Conclusion: GPs are highly involved in palliative health care, although many people die in hospitals. The spectrum of symptoms, treatments and diseases is markedly different compared to hospice or hospital based palliative care. This should be considered in educational programs in palliative care destined for primary care.

**Title:** Glycaemic control in end-of-life care.  
**Citation:** Current Opin Supportive & Pall Care, 2014, vol 8, p 378-382  
**Author:** Lindskog, M.  
**Abstract:** Diabetes mellitus is one of the most common comorbidities in palliative care. Yet, the optimal handling of diabetes mellitus in dying patients is debated. This review aims to discuss comprehensively the scientific basis as of today for diabetes mellitus management decisions in end-of-life (EOL) care. Glycaemic control provides prognostic information in EOL care of diabetes mellitus patients. Original data on how to manage dying patients with type 2 diabetes mellitus are scarce. Findings in elderly type 2 diabetes mellitus patients and expert opinions support that glycaemic control should be relaxed in dying patients with type 2 diabetes mellitus, in the absence of risk factors for true insulin dependence, to avoid symptomatic hypoglycaemia. For terminal but conscious type 1 diabetes mellitus patients, regular blood glucose measurements and continued insulin therapy is the mainstay, with some discrepancy in preferred management between palliative care physicians and diabetes consultants. No randomized controlled trials are available. Improvement is clearly needed with regard to communication about diabetes mellitus in EOL and documentation of decisions. Corticosteroid-induced diabetes mellitus is a significant problem in palliative care, but predictors exist. In the absence of large observational studies or randomized controlled trials, the current body of knowledge is based on expert opinions, surveys and retrospective studies. Nevertheless, some clinically meaningful recommendations can be made. Prospective studies need to be performed in order to improve our understanding about diabetes mellitus management in EOL. The palliative care community has a joint responsibility to address these questions.

**Title:** Health plans support care co-ordination.  
**Citation:** Managed Healthcare Executive, 2014, vol. 24/5(42-42), **Author(s):** Miller, J  
**Abstract:** The article explores on the medical outcomes of palliative care for patients with illnesses in the U.S. It highlights several illnesses treated with palliative care which include Alzheimer’s disease, heart disease, diabetes and Parkinson’s disease. It examines the benefits of hospice and palliative services for the quality of life of the patients.

**Title:** How sweet it is: Managing glucose intolerance at the end of life (512)  
**Citation:** J Pain and Symptom Management, 2011, vol./ls. 41/1(261), **Author(s):** McPherson L  
**Abstract:** Objectives: 1. Explain metabolic goals established for patients with diabetes (PWD), the time course of expected benefit for achieving these goals, and how these goals change for PWD at end of life. 2. Create strategies to achieve an appropriate level of blood glucose control in a PWD with advanced illness. 3. Discuss how to use effective communication strategies to explain the altered goals of care for PWD and advanced illness, as well as appropriate self-monitoring parameters. Approximately 24 million people in the United States have diabetes mellitus (almost 8% of the population), a metabolic syndrome characterized by hyperglycaemia and acute and chronic complications. An additional 57 million people in the United States have “pre-diabetes,” a precursor to diabetes mellitus. There is likely a higher prevalence of glucose intolerance in patients with advanced illness given the age of this population, comorbid conditions, and the propensity for medications used to treat symptoms to cause hyperglycaemia. This session is designed to help palliative care practitioners develop reasonable strategies to manage hyperglycaemia at end of life. The American Diabetes Association and other groups have established metabolic goals (eg, A1c, fasting, glucose, postprandial glucose, etc.) for patients with diabetes (PWD). In this session, participants will learn about the “payoff” period for these metabolic goals and how the goals of care should change for patients with advanced illness. An important part of caring for this patient population is explaining how and why the goals of care have changed; this is not to be confused with “giving up.” This includes monitoring glucose control, such as the role of blood glucose monitoring versus symptomatic management. These discussions are often important not only with the patient and family but also with other healthcare professionals who care for the patient. Participants in this session will learn how to alter therapy for patients with type-1 and type-2 diabetes as well as pre-diabetes and drug-induced hyperglycaemia (e.g., corticosteroid-induced). Therapeutic effectiveness including impact on A1c, pre-, and post-prandial glucose values and adverse effects will be discussed and how this data applies to the benefit/burden assessment in medication management in diabetes. Managing glucose intolerance at end of life can be like walking a tightrope, but the ultimate goal is patient comfort.
How to manage diabetes in advanced terminal illnesses.

Citation: Nursing Times, 2005, vol./is. 101/17(30-32), Author(s): Smyth T, Smyth D

Abstract: Diabetes mellitus is increasing in incidence and is therefore being encountered more frequently during palliative care. Diabetes management in the early stages of terminal disease is normally the same as conventional care. However, in the later stages of terminal illness there are a number of problems that may arise due to diabetes treatment, including hypoglycaemia and hyperglycaemia, which may impair the patient's quality of life. This article will address some of these problems and their management.

Identifying persons with diabetes who could benefit from a palliative approach to care.

Citation: Canadian Journal of Diabetes, 2015 vol 39/1(29-35) Author: Johnston, GM,

Abstract: OBJECTIVE: To determine the need for diabetes mellitus palliative care, we identified persons with a diagnosis of diabetes who accessed palliative care programs and those who may have benefited from a palliative approach to care. METHODS: This retrospective, descriptive research used 6 linked databases comprising 66 634 Nova Scotians from 3 health districts who died between 1995 and 2009, each with access to a palliative care program and diabetes centres. RESULTS: The percentage of persons with diabetes enrolled in palliative care increased from 3.2% in 1995 to 34.3% in 2009; 31.5% were enrolled within their last 2 weeks of life. Most did not have their diabetes recorded in palliative data. Among the 5353 persons with a diagnosis of diabetes who died between 2005 and 2009, 61.0% were in the Diabetes Care Program of Nova Scotia registry. An additional 19.6% were identified in the Cardiovascular Health Nova Scotia registry, and a further 3.7% in palliative data. Applying the criteria of Rosenwax et al to the 5353, 65.8% to 97.9% may have benefitted from a palliative approach. CONCLUSIONS: Rates of palliative enrolment for persons with diabetes are increasing. Diabetes care providers need to prepare patients and their families for changes in diabetes management that will be beneficial as end of life approaches. Collaboration among chronic disease programs, palliative care and primary care is advised to identify persons at end of life who have diabetes and to develop and implement care guidelines for this population.

Improving end of life care for people with diabetes

Citation: Practical Diabetes, 2012, vol./is. 29/8(306-307a), Author(s): Tapley M.,

Management of diabetes during the last days of life: Attitudes of consultant diabetologists and consultant palliative care physicians in the UK

Citation: Palliative Medicine, 2006, vol./is. 20/3(197-203), Author(s): Ford-Dunn S.,

Abstract: Diabetes is an increasingly common condition and hence, managing dying patients with diabetes as a co-morbidity will become a frequent challenge. It is uncertain whether there is net beneficence in preventing hyperglycaemia in diabetic patients during the terminal phase or whether the distress involved in administering therapy and blood glucose monitoring may outweigh this ordeal. Since there is no available evidence upon which to base clinical decisions, a semi-structured questionnaire based around three clinical vignettes was sent to consultants in diabetes and palliative care in the UK. There was consensus of opinion from both groups of consultants that treatment and monitoring should be stopped in patients with type 2 diabetes, once in the terminal phase. There was less consensus regarding management of type 1 diabetes. Practical issues were raised by both groups of consultants and clinical guidelines are suggested.

Management of diabetes in patients at the end of life

Citation: Nursing standard, 2010, vol./is. 25/6(42-46), Author(s): Budge P.

Abstract: 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.

Management of diabetes in patients with cancer.

Citation: QJM: monthly journal Association of Physicians, 2015 vol 108, no 6, p 443-448

Abstract: Diabetes is common amongst patients with cancer. The co-occurrence of diabetes and cancer may lead to poorer prognosis and complications in patients undergoing cancer therapy. There is no randomized trial evidence that treating hyperglycaemia in patients with cancer improves outcomes, and therefore a pragmatic approach to managing hyperglycaemic in
such patients is required. We discuss the management of hyperglycaemia in relation to cancer chemotherapy, glucocorticoids and enteral feeding. We also discuss management of glucose in diabetic patients with cancer approaching end of life care.

**Title:** Management of type 2 diabetes mellitus in palliative care -- is less more?

**Citation:** European Journal of Palliative Care, 2012, vol./is. 19/6(266-269), **Author(s):** Kindl, K,

**Abstract:** Managing diabetes mellitus takes on extra complexities in the palliative care setting. Korana Kindl, Nathalie van Havre and Janet Hardy look at the issues involved and suggest algorithms for managing diabetes in patients reaching the end of life.

**Title:** Matching individual patient needs and desires throughout end of life stages.

**Citation:** European Diabetes Nursing, 2014, vol 11, no 1, p. 19-22, **Author(s):** James, J

**Abstract:** End of life care is a subject that many patients or health care professionals would prefer not to talk about. People with diabetes have a unique set of care needs during the last year, months and days of life, but until now there has been little guidance on their specific clinical requirements. Approximately half a million people die in England each year and around 75 000 of them will have diabetes. European statistics demonstrate important variations in mortality and the burden of disease related to diabetes with age standardised death rates per 100 000 ranging from 4.0 (Greece) to 17.9 (Portugal), and with higher levels ranging from 36.1 (Israel) to 46.8 (Armenia). It is important that health care professionals are equipped with the knowledge, skills and clear guidance in order to support patients, relatives and carers during what is often a difficult time for all. This article gives a robust definition of the term 'end of life', discusses the demise of more generic United Kingdom guidance on the care of the dying, and presents a consensus approach to quality care for people who are nearing the end of their life. These recommendations were commissioned by Diabetes UK, developed by a multidisciplinary group of health care professionals and endorsed by key diabetes organisations. The recommendations given can easily be adopted for use in other countries, and the documents and tools are freely available to all.

**Title:** New AHRQ-funded studies focus on quality improvement in diabetes, atrial fibrillation, and end-of-life care.

**Citation:** AHRQ Research Activities, 2001, vol./is. /250(5-6),

**Title:** Palliative Care and Type II Diabetes: A Need for New Guidelines?

**Citation:** Am Journal of Hospice & Palliative Medicine, 2010, vol 27/7(444-445),

**Title:** Palliative and end of life care for people with diabetes: A topical issue

**Citation:** Diabetes Management, 2014, vol/is. 4/5(449-460), 1758-1907; **Author(s):** Dunning T,

**Abstract:** Managing diabetes is challenging, especially in palliative and end-of-life situations. The prime focus is usually on safety, comfort and quality of life rather than on achieving 'tight' blood glucose control. Preventing hypo- and hyper-glycemia is an important aspect of comfort and quality of life. The care plan and blood glucose targets need to be personalized to suit the individual's health and functional status, medicine regimen, risk profile and life expectancy, and, importantly, developed with the individual and sometimes their family carers. Once developed, the care plan should be monitored and reviewed regularly to accommodate changing health status and ensure the person's documented wishes are current. Key care challenges include detecting symptoms of hypo- and hyper-glycemia and determining their underlying causes so appropriate care can be initiated. Health professionals often find it difficult to decide on a management plan and when to withdraw treatment in rapidly changing circumstances, especially if the person has not documented their wishes. The paper addresses key palliative and end-of-life care issues relevant to Type 1, Type 2 and corticosteroid-induced diabetes.

**Title:** Palliative care and diabetes: Making the most of the end of life

**Citation:** Journal of Diabetes Nursing, 2012, vol. 16, no. 8, p. 327-330, **Author(s):** Da Costa, S

**Abstract:** The management of palliative care for patients with diabetes. The importance of co-ordinated diabetes and palliative care in line with NHS Diabetes recommendations, and the clinical priorities for diabetes management and care for terminally ill patients, are discussed. 2 case studies are presented, which highlight the impact of co-ordinated, proactive care, including specialist diabetes care, on the patient experience at end of life.

**Title:** Palliative care needs in diabetics: Which criteria to be applied and when?

**Citation:** Italian Journal of Medicine, 2014, vol./is. 8(44), **Author(s):** Ferrari P.,

**Abstract:** Background: Diabetes is nowadays a disabling disease, seriously increasing morbidity and mortality within the elderly population. Palliative Care focuses on relieving suffering and achieving the best possible quality of life for patients and caregivers; when early delivered (simultaneous care) it has the potential to improve quality of care and reduce health care costs.
Therefore, especially in non cancer settings, the criteria and the timing for referral to a palliative consultation, become crucial. Up to now no data are available on these issues. Aim: To describe the first validation step of the Palliative Needs Index in Diabetics (PaNID). Methods: Within "Diabetes and Palliative Care" study (926 CEC of Maugeri Research Institute), our group which encompasses internal medicine, endocrine and palliative care health professionals, identified, by literature and clinical experience, 10 domains potential indicators in synergy for a palliative care need in diabetic patients: diabetes features, micro and macro vascular complications, chronic pain, comorbidity, functional dependence, frailty, cognitive dysfunction, polypharmacy and care giver distress. Two total scores can be obtained; PaNID-10: absence/presence of critical items (range 0-10); PaNID-100: total severity score stemming from the sum of each domain severity assessed by the internist on a 0-10 scale (range 0-100). Conclusions: The PaNID may be a synthetic measure of suitability about palliative care consultation at internist’s disposal. The next step will be to make feasible the tool and to implement these first data.

Title: Palliative care pharmacotherapy literature summaries and analyses

Citation: J Pain & Pall Care Pharmacotherapy, 2010, vol 24/2(172-176), Author: Abernethy AP

Abstract: Timely and important studies are reviewed and commentaries provided by leading palliative care clinicians. Symptoms, interventions, and treatment-related adverse events addressed in this issue are the addition of nutritional support for the treatment of pressure ulcers; advantages of hypertonic saline solution plus high-dose intravenous (IV) furosemide over repeated paracentesis plus albumin in the management of cirrhosis-associated refractory ascites; increases in opioid-related mortality with the availability of long-acting oxycodone in Canada; the safety and efficacy of ABT-594 for diabetic neuropathic pain; and examination of the influence nursing home cultural characteristics on use of feeding tubes.

Title: Practical management of diabetes mellitus.
Citation: Europ J of Palliative Care, 2006, vol 13, no. 6, p. 226-229, Author(s): McCann, M,

Abstract: Management of type 1 and type 2 diabetes mellitus in people who also require palliative care. Treatment options are reviewed, including dietary control, the use of oral hypoglycaemic agents, insulin and corticosteroids.

Title: Professor Trisha Dunning launches the diabetes and end of life care brochures in Canberra. Citation: Australian Nursing Journal, 2013, vol./is. 20/7(13),

Citation: Journal of Hospice and Palliative Nursing, 2015, vol. 17, no. 4, p. 293-300,
Author(s): Savage, Sally, Dunning, Trisha, Duggan, Nicole, Martin, Peter

Abstract: Diabetes is a common, increasingly prevalent chronic disease. Many people requiring palliative care have diabetes. Diabetes requires lifelong self-care tasks. Family carers frequently perform these tasks when the person with diabetes is no longer able to perform them, but there is a lack of information about carers' needs to enable them to undertake their new care tasks. The study aimed to collect information from family carers of people with diabetes requiring palliative care about their views and experiences of managing a family member’s diabetes at the end of life and identify their needs to enable them to undertake diabetes care tasks. Data were collected during individual, semistructured interviews with 10 family members caring for a person with diabetes receiving palliative care. The 4 key themes identified were as follows: I didn't know what to do; it's a big responsibility; I need education; and it's important to manage diabetes. Family members/carers feel anxious about their increasing responsibility when caring for their family member’s diabetes and need information and education to help them monitor and interpret blood glucose levels, manage high or low blood glucose levels, and administer glucose-lowering medicines safely and confidently.

Title: The experiences and care preferences of people with diabetes at the end of life: a qualitative study.
Citation: Journal of Hospice & Palliative Nursing 2012, vol 14(293-302), Author(s): Savage, S

Abstract: The aims of the study were to explore the past and current diabetes management experiences of people with diabetes at the end of life and identify their preferences for how they want their diabetes managed at the end of life. Fourteen semi structured interviews were conducted with people with diabetes receiving palliative care in a regional city in Victoria, Australia. The interviews were audio recorded, transcribed, and analyzed using framework analysis. Five key themes were identified from the data: living with diabetes, sometimes they “bugger it up,” it is a complicated subject, when I am very ill, and plans for the very end. The findings suggest that health professionals should continue monitoring blood glucose levels when a person has a life-limiting illness, listen to the views of the person with diabetes about his/her diabetes management, and identify and acknowledge the patient’s diabetes management preferences when he/she is very ill.
Title: The management of diabetes in cancer patients receiving palliative care in a hospital setting  
Citation: Palliative Medicine, 2010, vol./is. 24/4 Sup 1(S129),  
Author: Balding L,  
Abstract: Background: The management of diabetes in cancer patients, whether pre-existing or secondary to disease or treatments, can be complicated by nausea and vomiting, use of steroids and hepatic or renal dysfunction, and poses a significant clinical challenge. Aim: To improve the overall management of cancer patients with diabetes by raising the awareness of regional guidelines which have been developed in concordance with current best practice. Methods: 1. Retrospective evaluation of our practice, 2. Development of departmental guidelines following a detailed literature review, 3. Organisation of an education session to raise awareness of the new guidelines, 4. Prospective re-evaluation of practice in terms of adherence to the guidelines. Results: In the retrospective audit, 11/79 patients (16.4%) had diabetes. No consistent approach to the management of diabetes was seen. In the prospective audit, 9/79 patients (11.4%) had diabetes. Management of diabetes was evaluated in 1 patient with diet-controlled diabetes, 4 patients with type 2 diabetes on oral hypoglycaemic agents (OHA), 2 patients with type 2 diabetes on insulin, 2 cases of steroid induced diabetes and in 2 patients with diabetes who were dying. A lack of significant variation in practice between retrospective and prospective audit was seen. There was no consistent approach to treatment, monitoring, involvement of specialists and discussion/documentation of diabetic management, with wide variation noted from type of OHA prescribed, to frequency of monitoring, average blood sugar range, use of insulin sliding scales and management in the event of nausea and vomiting. Conclusion: The literature in the area of management of diabetes in advanced cancer is not extensive, and diabetes management has changed in recent years. Considerable variation and inconsistency in practice was noted in this audit, indicating the need to introduce the guidelines more widely, with greater emphasis on education and supervision.

Title: The role of specialist palliative care in managing patients with multimorbidity  
Citation: BMJ supportive & palliative care, 2012, vol/is 2/1(48-50)  
Author: Calam MJ  
Abstract: This case report describes a patient with multiple morbidity resulting from complicated type 2 diabetes, psoriatic arthritis and abdominal surgery. It highlights the importance of specialist palliative care services in meeting his complex holistic care needs. We acknowledge the growing number of patients living with multiple morbidity and the challenges this group can present. There is then a debate around when to involve specialist palliative care services in the management of multiple morbidity given that there is often an uncertain disease trajectory.

Title: Treating diabetes mellitus in palliative care patients.  
Citation: Europ Journal of Palliative Care, 2003, vol. 10 no 5 p 186-188, Author(s): Usborne, C,  
Abstract: Causes, diagnosis and management.

Title: Varying insulin use in older hospitalized patients with diabetes.  
Citation: J of Nutrition, Health & Aging, 2009, vol. 13, no. 5, p. 456-459, Author(s): Jover, N  
Abstract: Observation of insulin use in consecutive hospitalized diabetic older patients in acute care wards with reference to nutritional intakes, measures of functional status, and varying clinical situations. Prospective case study in a geriatric medicine ward with CGA, dietary intake measure and used insulin dosage. Among 600 inpatients, 90 diabetic subjects were found. Only 12.2% diabetic patients had MMSE > 23 and 23.3% were unable to eat without assistance. During the stay 54 patients had received insulin. From admission to discharge or death, doses were 0.39 to 0.19 U/kg (SD 0.41-0.15) during palliative care, 0.43 to 0.45 U/kg (SD 0.20-0.20) in the event of failure of oral therapy, 0.38 to 0.42 U/kg (SD 0.18-0.25) if creatinine clearance was 30 ml/min or lower, and 0.38 to 0.27 U/kg (SD 0.24-0.26) in critical diseases. Dietary intake increased in all during the stay with an energy intake close to 20 kCal/kg/d at discharge, except for those in palliative care, who had a final intake of 8.2 kCal/kg/d (SD 9.1). Insulin treatment guidelines adapted to this frail diabetic population are necessary.
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