Diabetes in Palliative Care

Presenter: Winnie Wong (Internal Medicine R3)

Reference: Article: Jana Pilkey, Lisa Streeter, Alexandra Beel, Timothy Hiebert, and Xuan Li. Corticosteroid-Induced Diabetes in Palliative Care. Journal of Palliative Medicine. June 2012, 15(6): 681-689.

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 hyperglycemia screening protocol.

Strengths

- Screening tool – All patients prescribed steroids underwent screening except: close to death, 2 refused. (No patients or families asked to have monitoring stopped once it was initiated).
- Look for risk factors/predictors for development of SDM in palliative population to identify the patients most at risk who would benefit from ongoing glucose monitoring.

Weaknesses

- Retrospective design - can't control exposure or outcome assessment, relies on accurate record-keeping. "Many patients in the study did not go on to have fasting morning glucose levels checked, and it was often difficult to determine if symptoms were attributable to hyperglycemia." The study classified SDM based on fasting morning glucose of >7mmolL ∴if fasting glucose levels were not checked the prevalence data obtained would be inaccurate.
- Lack of diagnostic criteria for steroid induced DM in guidelines.
- Previous studies show that development of frank DM in previously normal patients is unusual. Degree of impairment is proportional to pre-existing status of glucose tolerance. [1] Could some of the patients diagnosed as hyperglycemia or SDM have pre-existing undiagnosed T2DM?

Relevance to palliative care

Corticosteroids are commonly used medication in palliative care. Indications include malignancy (ie. decreasing peritumoral edema associated with brain tumors, spinal cord compression, SVC syndrome, etc.) and symptomatic treatment (ie. treatment of nausea, dyspnea, anorexia, weight loss, etc). Literature suggests that 30-60% of patients in palliative care receive corticosteroids as part of their treatment. This study found that the prevalence of SDM and hyperglycemia is palliative patients is higher than the previous estimate.

With a screening protocol, perhaps there is an opportunity for earlier detection of hyperglycemia leading to patients being more closely monitored and treated when symptomatic, if this approach is consistent with the goals of care. It will be interesting to learn about the further study the authors are doing in regards to looking into costs and outcomes of a hyperglycemia protocol.

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[1] Olefsky JM, Kimmerling G. Effects of glucocorticoids on carbohydrate metabolism. Am J Med Sci 1976; 271:202.

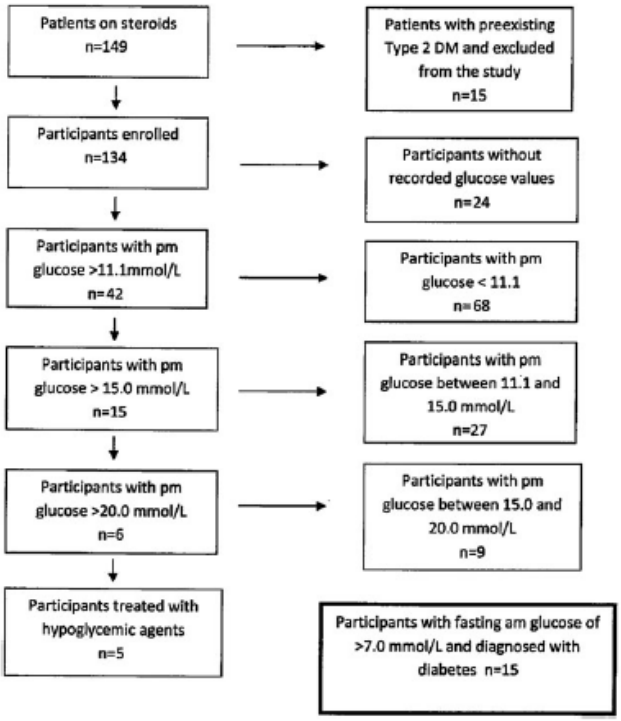

FIG. 1. Enrollment of patients and their glucose values.

TABLE 4. CHARACTERISTICS OF THE PATIENTS WITH DIABETES

Demographic data			
Number of patients with diabetes	15		
Males (%)	5 (33)		
Females (%)	10 (67)		
Age range	51–89 (median 78)		
PPS range	10–50 (median 30)		
Length of stay (days)	11–129 (median 33)		
Patients who died during admission (%)	12 (80)		
Steroid use prior to admission (%)	13 (87)		
Patients treated with hypoglycaemic medications	5		
Primary cancer diagnoses (%)			
Lung	6 (40)	Brain	1 (7)
Colon	1 (7)	Pancreatic	1 (7)
Prostate	2 (13)	Other	4 (26)
Secondary diagnoses (%)			
Infection	5 (33)		
Prescribing indication (%)			
Pain	6 (40)	Other	1 (7)
Brain Tumor (primary or secondary)	5 (33)	Unknown	2 (13)
Dyspnea	1 (7)		

Hypoglycaemic treatments				
Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Novolin™ 30/70	Metformin	Humulin R	Novo Rapid	Humulin R
Humulin™ R	Novolin Toronto	Novolin NPH		Novolin NPH
NovoRapid™				

PPS, Palliative Performance Scale.