acid (ZOL) infusion provided a greater reduction of serum procollagen type 1 N propeptide (P1NP) at 3 months than once weekly oral alendronate (ALN). Percentages of P1NP change in ZOL group was -70.25±17.51% and ALN group was -60.61±18.87% (P= 0.012). A decrease of P1NP ≥40% was observed in the majority of patients in both groups (89.4% in ZOL group and 85.1% in ALN group) (P= 0.536). ZOL was non-inferior to ALN in terms of BMD change at lumbar spine (4.8±5.5% in ZOL versus 4.9±4.5% in ALN treated patients) with P value of 0.922 and also at total hip (3.8±8.0% in ZOL versus 3.8±7.5% in ALN group) (P= 0.970). Two cases (4.3%) of new fractures was observed in ZOL group whereas 4 cases (8.5%) of new fractures occurred in ALN group over one year of study. The overall frequencies of treatment related adverse effects were similar between ZOL group (57.4%) and ALN group (42.6%) (P= 0.149). ZOL group showed significantly increased frequencies of musculoskeletal pain (57.4%) and acute phase reaction (12.8%) and 12.8% of participants in ALN group complained of heartburn. The overall preference to continue current medication was higher in ZOL group than ALN group (P= 0.002). The participants treated with ZOL were tend to have more satisfaction (P= 0.026) and willing to receive it longer period (P< 0.001).Compared to weekly oral alendronate therapy in treatment of postmenopausal osteoporosis, yearly infusion of 5 mg zoledronic acid infusion produced a significant greater response in serum P1NP at 3 months and similar change in BMD at one year of treatment and overall frequencies of adverse effects were similar between two treatment groups with excellent patient preference and satisfaction after zoledronate treatment. **Reference:** (1) Al-Bogami et al (2015) Favorable therapeutic response of osteoporotic patients to treatment with intravenous zoledronate compared with oral alendronate. *Saudi Med J*. 36(11):1305-1311. (2) Saag et al (2007) A single zoledronic acid infusion reduces bone resorption markers more rapidly than weekly oral alendronate in postmenopausal women with low bone mineral density. *Bone*. 40:1238-1243.

Diabetes Mellitus and Glucose Metabolism

TYPE 1 DIABETES MELLITUS

Relapsing Diabetic Ketoacidosis During Stepdown from Intensive Care Unit

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BACKGROUND: DKA is a life-threatening and expensive complication of diabetes, costing $5.1 billion annually. Recurrent DKA accounts for ~ 20% of DKA admissions. Here we present 2 patients with relapsing DKA during transition from ICU to the medical floor. CASE-1: A 61-year-old previously healthy man presented with 3-day of generalized weakness and nausea. Review of systems was positive for polyuria and polydipsia. His brother has T2D. Examination: afebrile, HR 166/min, BP 146/104mmHg, dry oropharynx. Labs: Serum glucose 689mg/dl, Na 126mmol/L(136-145mmol/dl), K 4.8mmol/L(3.5-5.1mmol/L), Cl 78mmol/L(98-107mmol/L), bicarbonate 8mmol/L(21-32mmol/L), creatinine 4 mg/dl(0.7-1.3mg/dl), Anion gap(AG) >20(5-20), HCT 57.6%(38.8-48%), A1c 10.4%, c-peptide 1.5ng/ml(0.8-3.8ng/ml). Urine: ketones++. A diagnosis of new-onset diabetes presenting with DKA was made. Patient was admitted to ICU and insulin and saline were infused per protocol. Because the AG closed promptly and bicarbonate improved to 20mmol/L, insulin drip was stopped in the ICU and patient was transferred to medical floor. Evaluation on the medical floor 4 hours later showed bicarbonate of 14 mmol/L and AG >20. Due to deterioration, patient returned to the ICU for management of recurrent DKA. After stabilization in ICU, patient returned to the medical floor and was successfully discharged on basal-bolus insulin the next day. CASE-2: A 35-year-old with history of T2D presented with 1-day of nausea and vomiting. Review of systems was positive for polyuria and polydipsia. Home medications: metformin, glipizide and glargine. Examination: afebrile, HR 104/min, BP 154/97mmHg and tender abdomen. Labs: Serum glucose 411mg/dl, Na 137mmol/L, K 4.6mmol/L, Cl 103mmol/L, bicarbonate 17mmol/L, Creatinine 0.9 mg/dl, AG 22, BHB 6.98 mmol (0.0-0.89mmol), A1c 9%. Patient was admitted to ICU for DKA management. Bicarbonate improved to 20 mmol/L, so insulin drip was stopped in the ICU and patient was transferred to medical floor. Evaluation after 6 hours showed bicarbonate of 17mmol/L and AG of 20. Because of the decreasing bicarbonate and increasing AG, a diagnosis of recurrent DKA was made and prompt insulization was restarted. Patient responded to the regimen and was discharged home on basal-bolus two days later. CONCLUSION: Recurrent DKA due to abrupt cessation of IV insulin prolonged these patients' hospitalization. The practice of overlapping IV insulin with SQ insulin for >30 min prevents dissipation of insulin action during resolution of DKA. Half-life of IV insulin is 3 min, so SQ insulin must be given before cessation of the insulin drip to prevent the relapse. Omission of this practice, as occurred in these patients unfortunately, caused relapse in DKA and prolonged hospitalization. Education of ICU staff on proper insulin management is warranted to prevent healthcare cost: the cost of a DKA hospitalization was $26,566 in 2014.

Pediatric Endocrinology

ADVANCES IN PEDIATRIC OBESITY AND CANCER

Relationship of TSH Levels with the Components of Metabolic Syndrome in a Nationally Representative Population of Youth in the United States.

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Introduction: Subclinical hypothyroidism (SH) is defined as elevated TSH with normal thyroid levels, and is often associated with obesity. SH has been linked to cardiometabolic risk factors such as abnormal lipids, elevated blood pressure, atherosclerosis and fatty liver. This study sought to elucidate the association of TSH level with the components of metabolic syndrome independent of BMI in children from the National Health and Nutrition Examination Survey (NHANES).