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Short Stay Review (SSR) – Electrolyte Abnormalities

Background

Electrolyte abnormalities are among the diagnoses that appear with above average frequency in medical claims identified for Medicare Part A short stay review (SSR). Five Medicare Severity Diagnosis Related Groups (MS-DRGs) contain principal diagnoses related to electrolyte abnormalities. These groups include MS-DRG 637 (Diabetes with major complication or comorbidity (MCC)), MS-DRG 638 (Diabetes with CC), MS-DRG 639 (Diabetes without MCC/CC), MS-DRG 640 (Miscellaneous Disorders of Nutrition, Metabolism, Fluids and Electrolytes with MCC) and MS-DRG 641 (Miscellaneous Disorders of Nutrition, Metabolism, Fluids and Electrolytes without MCC).

This month's Livanta Claims Review Advisor reviews certain electrolyte abnormality diagnoses associated with MS-DRGs 637- 641. This publication also discusses some of the clinical considerations involved in documenting the reasonableness of a two-midnight expectation at the time of inpatient admission. These clinical considerations are not specific to any DRG but may apply whenever electrolyte abnormalities are present at the time an inpatient admission decision is made.

Short Stay Review Findings

Through December 2023, Livanta has sampled and reviewed more than 43,300 Part A short stay claims due to a recorded inpatient stay of less than two midnights. These records included claims submitted under MS-DRG 637, 638, 639, 640, and 641. The number of claims reviewed for each MS-DRG, and the resulting error (denial) rate are listed in the table below. All denials were for failure to meet the two-midnight benchmark.[1]

Table 1: Error Rates for Selected DRGs

MS DRG	Total Reviewed	Error Rate
637	113	3.50%
638	190	7.40%
639	46	6.50%
640	518	10.20%
641	1,118	11.60%

The table above summarizes the SSR error rates for the DRGs discussed in this issue for reviews completed from October 2021 through December 2023.

Examples of Electrolyte Abnormalities

Electrolyte abnormalities can exacerbate other chronic medical conditions or be a primary concern. When deciding on the acuity and length of care required for correction of such abnormalities, the clinician must carefully consider the patient's overall condition, exacerbating factors, and the degree of metabolic disturbance. To substantiate Medicare Part A payment, it is important that clinicians document the critical factors that support their decisions in the medical record.

Documentation at the time of the inpatient admission should *indicate the degree of the abnormality, reasons that close monitoring is required, and the projected plan of care, as many patients can be transitioned to oral replacement if clinically stable*

Some electrolyte abnormalities can be replaced quickly (within a few hours), while others may take 24-48 hours or longer to replace, depending on the chronicity of the onset as well as patient-specific factors. Some patients might require hospitalization during replacement for close monitoring or potential complications. Electrolyte abnormalities that might require hospitalization include severe aberrations in sodium (hyper- and hyponatremia), potassium (hyper- and hypokalemia), calcium (hyper- and hypocalcemia), and magnesium (hyper- and hypomagnesemia). Documentation at the time of the inpatient admission should indicate the degree of the abnormality, reasons that close monitoring is required, and the projected plan of care, as many patients can be transitioned to oral replacement if clinically stable.

Hyperglycemic Emergencies

Hyperglycemic emergencies include diabetic ketoacidosis (DKA) and hyperosmolar hyperglycemia state. DKA most commonly occurs in patients with Type 1 diabetes. The mainstay of treatment for DKA is fluid resuscitation, correction of potassium abnormalities, and administration of insulin. Metabolic disturbances should be corrected over 24-36 hours depending on the severity of the

disturbance.2 The degree of acidosis and electrolyte disturbance, especially potassium, can help determine the patient's hospital course. Some patients with mild acidosis and mild electrolyte disturbances can be treated in the emergency department (ED) or outpatient setting. Patients with mild to moderate disturbances can often be managed with a 24-36 hour stay. Depending on the nursing services required for frequent glucose, electrolyte and metabolic acidosis monitoring, some patients with moderate-severe DKA are managed in the intensive care unit (ICU) or intermediate care unit. This will also depend on the comfort level of the nursing staff at the facility. Providers should rely on services to be rendered rather than location (such as ICU) to determine inpatient versus observation admission.

The degree of acidosis (typically bicarbonate concentrations less than 10 milliequivalents per liter) and glucose concentrations increase the patient's mortality risk.[2] The most common complication of DKA during treatment is hypoglycemia which is estimated to be 5-25 percent.[3] Livanta relies on documentation in the medical record during the review process and advises that providers document the reasoning for Part A payment, including individual patient risks. The documentation at the time of admission should comply with the Two-Midnight Rule. Livanta advises that documentation should include the plan of care and patient-specific possible complications and not rely solely on the diagnosis of DKA to support Part A payment.

Hyperosmolar hyperglycemic state (HHS) occurs most often in Type 2 diabetes patients. HHS is typically found in patients with undiagnosed or poorly controlled Type 2 diabetes. HHS is usually caused by an inflammatory state with marked elevation in pro-inflammatory/stress hormones in patients with insulin resistance leading to somatic diuresis followed by impaired renal excretion of glucose. HHS is defined by severe hyperglycemia (glucose more than 600 milligrams per deciliter), ketones are negative to mildly positive, bicarbonate greater than 15 milliequivalents per liter, and pH greater than 7.3.[4] Abnormalities in electrolytes are the most common complication of HHS, and cerebral edema is a feared but rare complication.[5] The degree of electrolyte abnormalities will help determine length of stay, typically 24-36 hours. Livanta advises that the factors that lead to a two-midnight expectation (including the timing of the initiation of care) be clearly documented, as most electrolytes can be replaced in less than 48 hours of acute hospitalization.

Sodium Abnormalities

Hyponatremia is a relative increase in water compared to sodium. Treating patients for hyponatremia will depend in part upon the acuity and the time of onset. Rapid changes in sodium, whether decreased from excessive water intake, excessive intravenous (IV) fluids, or rapid over-correction, places the patient at greater risk of complications. Severe hyponatremia symptoms include seizures, obtundation, respiratory arrest, and coma.[6] Severe symptoms are uncommon in patients with chronic hyponatremia. Typically, most patients with acute hyponatremia, severe hyponatremia (less than 120 milliequivalents per liter), and those with symptomatic hyponatremia will be treated in the hospital setting to allow for frequent monitoring and accurate measurement of serum sodium.6 The duration of the hospitalization will depend on individual patient factors, compliance with treatment, and ability to obtain outpatient follow up. Livanta advises that the documentation at the time of the inpatient admission include an appropriate plan of care with route and duration of replacement noted.

Potassium / Magnesium Abnormalities

Hyper- and hypokalemia are common electrolyte abnormalities. Ninety percent of total body potassium is sequestered within cells; therefore, hypokalemia is not necessarily synonymous with whole body potassium deficiency.7 Laboratory measurement of potassium is useful but may be

affected by iatrogenic factors. Hyperkalemia is a common laboratory error that occurs with mechanical trauma and hemolysis during blood collection. In addition, repeated fist clenching during a blood draw can cause potassium to move out of muscle cells, raising the serum potassium concentration by one to two milliequivalents per liter or more.[8]

Hyperkalemia can be a medical emergency requiring hospitalization and treatment with rapidly acting therapies. Symptoms of hyperkalemia requiring immediate treatment include muscle weakness or paralysis, cardiac conduction abnormalities, and cardiac arrhythmias. Patients with severe hyperkalemia typically have a significant underlying cause, such as chronic kidney disease (CKD), diabetic ketoacidosis, hyperosmolar hyperglycemic state, tissue breakdown (e.g., rhabdomyolysis), or reabsorption of blood from the gastrointestinal (GI) tract, any of which would involve a primary diagnosis mapping to a different MS-DRG than either 640 or 641. Hyperkalemia in an individual without an underlying disease requiring concomitant treatment can often be corrected within 6 to 12 hours.

Potassium repletion is best administered orally in moderate dosages and should be continued for days to weeks to achieve full repletion.[7] Asymptomatic hypokalemia does not routinely require prolonged hospitalization given the repletion should be continued for weeks. Hypokalemia replacement is closely tied to magnesium levels, and they should be checked. Magnesium can quickly and easily be replaced with an IV infusion over two hours or oral replacement.

Documentation for Electrolyte Abnormalities

Livanta advises that patient-specific documentation be included in the medical record to support the reason for inpatient admission. Documentation at the time of the admission should indicate the degree of the metabolic abnormality and the projected plan of care with reasons for close monitoring. A favorable medical review decision is facilitated when there is documentation of the factors that support either a two-midnight expectation or the need for inpatient care when a two-midnight expectation is uncertain, but there are complex medical factors clearly present at the time the inpatient admission decision is made.

The degree of electrolyte abnormalities will help determine length of stay, typically 24-36 hours. Livanta advises that the factors that lead to a two-midnight expectation (including the timing of the initiation of care) be clearly documented since most electrolytes can be replaced in less than 48 hours of acute hospitalization

About Livanta

Livanta is the Medicare Beneficiary and Family Centered Care-Quality Improvement Organization (BFCC-QIO) conducting post-pay fee-for-service claim reviews of acute care inpatient hospitals, long-term acute care hospitals, and inpatient psychiatric facilities to determine the appropriateness of Part A payment for short stay inpatient hospital claims. These claims are reviewed on a case-by-case basis in accordance with the Two-Midnight Rule published in FY 2014 Hospital Inpatient Prospective Payment System (IPPS) Final Rule CMS-1599-F, as revised by CMS-1633-F. CMS issued the following BFCC-QIO Two-Midnight Claim Review Guideline that graphically depicts the tenets of the Two-Midnight Rule. Livanta utilizes this Guideline when making payment determinations for short stay review claims.

CMS Two-Midnight Claim Review Guideline (file may appear in a download folder)
https://www.cms.gov/sites/default/files/2022-04/BFCC-QIO-2-MidnightClaimReviewGuideline.%20508.pdf

End Notes

[1] Centers for Medicare & Medicaid Services (CMS) Two-Midnight Claim Review Guideline. Available at https://www.cms.gov/sites/default/files/2022-04/BFCC-QIO-2-MidnightClaimReviewGuideline.%20508.pdf
[2] Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9th Edition, pg 1436
[3] Lizzo, Jenna M. Goyal, Amandeep, Gupta, Vikas. Adult Diabetic Ketoacidosis StatPearls. Treasure Island (FL): StatPearls Publishing; 2023 https://www.ncbilnlm.nih.gov/books/NBI. Accessed Aug 16, 2023.
[4] Tintinalli pg 1444-1445
[5] Adeyinka, Adebayo; Kondamudi, Noah. Hyperosmolar Hyperglycemic Syndrome StatPearls. Treasure Island (FL); StatPearls Publishing; 2023. Available at https://www.ncbi.nlm.nih.gov/books/NBK482142/
[6] Overview of the treatment of hyponatremia in adults. https://www.uptodate.com/contents/overview-of-the-treatment-of-hyponatremia-in-adults#H1484276725
[7] Cohn JN, Kowey PR, Whelton PK, et al. New Guidelines for Potassium Replacement in Clinical Practice. A contemporary review by the national council on potassium in clinical practice. Arch Intern Med. 2000;160:2429-2436
[8] Don BR, Sebastian A, Cheitlin M, Christiansen M, Schambelan M. Pseudohyperkalemia caused by fist clenching during phlebotomy. N Engl J Med. 1990;322(18):1290.

Questions?

Should you have questions, please email **ClaimReview@Livanta.com** or visit the claim review website for more information:
https://www.livantaqio.cms.gov/en/ClaimReview/index.html