Guidance document for processing PM-JAY packages

Hyperosmolar Non-ketotic coma

Procedures covered: 1

Specialty: General Medicine, Pediatric Medical Management

Package name	Procedure name	HBP 1.0 code	HBP 2.0 code	Package price
Hyperosmolar Non-ketotic coma	Hyperosmolar Non-Ketotic coma	M100053	MG061A	General Ward- 1,800 HDU – 2,700 ICU without ventilator– 3,600 ICU with Ventilator– 4,500

ALOS: 3-5 Days
Minimum qualification of the treating doctor:
Essential: DM/MD/DNB equivalent (in General Medicine, Endocrinology & Metabolism)

Special empanelment criteria/linkage to empanelment module: Tertiary Care facilities

Disclaimer:

For monitoring and administering the claim management process of **Hyperosmolar Non-ketotic coma** NHA shall be following these guidelines. This document has been prepared for guidance of PROCESSING TEAM and TRANSACTION MANAGEMENT SYSTEM of AB PM-JAY for the claims of procedures mentioned above. The hospitals can also refer to this document so that they have the insight on how the claims will be processed. However, this document doesn't provide any guidance on clinical and therapeutic management of patient. In that respect the hospitals and physicians may refer to any other relevant material as per the extant professional norms.

PART I: GUIDELINES FOR CLINICIANS AND HEALTHCARE PROVIDERS

1.1 Objective:

The purpose of this section is to act as a guidance & a clinical decision support tool for the clinicians in deciding the line of treatment, plan clinical management of patient and decide referral of cases to the appropriate level of care (as required) for treatment of patients under PMJAY and selection of corresponding Health Benefit Package.

It will also serve as a tool for hospitals to determine and submit the mandatory documents required for claiming reimbursement of health benefit package under PMJAY.

1.2 Clinical key pointers:

Hyperosmolar hyperglycemic syndrome (HHS) is a clinical condition that arises from a complication of diabetes mellitus. This problem is most commonly seen in type 2 diabetes.

Clinical Features

The history and physical examination are very important in the diagnosis of HHS. In many instances, there is a significant overlap in the signs and symptoms seen in HHS and DKA. In the history taking and the initial assessment, particular attention should be focused on the insulin regiment, missed doses of the oral hypoglycemic agent, overconsumption of carbohydrate-rich diet, or simultaneous use of medications that can trigger hyperglycemia or cause dehydration.

If an infectious process precedes HHS, signs, and symptoms include:

- Fever
- Malaise
- General weakness
- Tachypnea
- Tachycardia

If the precipitating factor is a cardiac, vascular condition, signs and symptoms will include:

- Chest pain
- Chest tightness
- A headache
- Dizziness
- Palpitation

The typical clinical presentation of patients with HHS is increased urination (polyuria) and increase water intake (polydipsia). This is a result of the stimulation of the thirst center in the brain from severe dehydration and increased serum osmolarity. Weakness, malaise, and lethargy can also be part of the complaint.

Severe dehydration from HHS can also affect the skin and integumentary system. Typically, the skin and the oral mucosa are dry with a delayed capillary refill.

The most important distinguishing factor in HHS is the presence of neurological signs. Decreased cerebral blood flow from severe dehydration can cause:

- Focal neurological deficit
- Disturbance in visual acuity
- Delirium
- Coma

A system-based approach is necessary for the physical assessment:

- General appearance: Patient with HHS are generally ill-appearing with altered mental status
- Cardiovascular: Tachycardia, orthostatic hypotension, weak and thready pulses
- Respiratory Rate: Can be normal, tachypnea might be present if acidosis is profound
- Skin: Delayed capillary refill, poor skin turgor, skin tenting might not be present even in severe dehydration because of obesity
- Genitourinary: Decreased urine output

- Central Nervous System (CNS): Focal neurological deficit, lethargy with low Glasgow Coma Score. In severe cases of HHS, patients might be comatose.

Diagnosis

According to the recommendation of the American Diabetic Association and current international guideline, HHS is defined by plasma glucose level greater than 600 mg/dL, plasma effective osmolarity greater than 320 mOsm/L, and absence of significant ketoacidosis.

Management

Aggressive hydration with isotonic fluid with electrolyte replacement is the standard practice in the management of HHS. An initial fluid bolus of 15 to 20 ml/kg followed by an infusion rate of 200 to 250ml/hour is the recommended rate for adults. In pediatric patients, the infusion should run at about twice the maintenance rate. Hydration with isotonic fluid has been shown to help in reducing the amount of counterregulatory hormones produced during HHS. The use of this alone can reduce serum glucose by about 75 to 100 mg/hour. The serum potassium in HHS is usually high, but the total body potassium is low as a result of the extracellular shift from lack of insulin. Potassium replacement should be started when the serum potassium is between 4 to 4.5 mmol/L.

Care should be taken to avoid starting insulin drip in the initial stage of treatment as this might cause a rapid drop in serum glucose leading to cerebral edema. It is recommended to try to keep the glucose level around 300 mg/dL to prevent the development of cerebral edema.

1.3 Mandatory documents- For healthcare providers

Following documents should be uploaded by the concerned hospital staff at the time of pre-authorization and claims submission:

Mandatory document	Hyperosmolar Non-ketotic coma
i. At the time of Pre-authorization	
a. Clinical Notes including evaluation findings, indications for the procedure, and planned line of treatment	Yes
b. Relevant Investigations 1. Blood Glucose 2. Serum osmolarity 3. urine ketones 4. hemogram	Yes
ii. At the time of claim submission	
a. Detailed Indoor Case Papers with treatment given details.	Yes
b. Post treatment Investigations 1. Blood glucose 2. Serum osmolarity 3. HbA1C	Yes

d. Detailed Discharge Summary	Yes

PART II: GUIDELINES FOR PROCESSING TEAM

2.1 **Objective:** To provide guidance to the pre-authorization and claims processing team in ascertaining the medical necessity of procedure carried out vis a vis the patient's medical condition as evidenced by supporting documents/investigation reports etc, in deciding the admissibility and quantum of claim and compliance with mandatory documents by the hospital.

2.2 **Following mandatory documents to be diligently reviewed by the pre-auth / claims processing personnel:**

Mandatory documents	**Hyperosmolar Non-ketotic coma**
i. At the time of pre-authorization processing- For pre-authorization processing doctor (PPD)	
a. Was the Clinical Notes including evaluation findings, indications for the procedure, and planned line of treatment submitted?	Yes
b. Were the following Investigation reports submitted? 1. Blood glucose 2. Serum osmolarity 3. urine ketones 4. hemogram	Yes
ii. At the time of claim processing- For claims processing doctor (CPD)	
a. Was Detailed Indoor Case Papers with vital (BP and Pulse) and Treatment details submitted?	Yes
b. Were the following post treatment investigation reports submitted? 1. Blood glucose 2. Serum osmolarity 3. HbA1C	Yes
c. Was the Detailed Discharge Summary submitted with the date of the follow-up mentioned?	Yes

PART III: GUIDELINES FOR TRANSACTION MANAGEMENT SYSTEM (TMS)

3.1 **Objective:** To enable setting up of cross check mechanisms/rule engines within the IT platform (TMS) to ensure compliance with STGs and to prevent fraud / abuse of the Health Benefit Package.

3.2 **Below mentioned are the scenarios where a provision would be built in TMS for pop-ups**:

1. Was the serum osmolarity of patient greater than 320 mOsm/L? Yes

Till the time the functionality is being developed, the processing doctors shall check the above manually.

References

1. Adeyinka A, Kondamudi NP. Hyperosmolar Hyperglycemic Nonketotic Coma (HHNC, Hyperosmolar Hyperglycemic Nonketotic Syndrome) [Updated 2020 Feb 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-
2. Zeitler P, Haqq A, Rosenbloom A, Glaser N., Drugs and Therapeutics Committee of the Lawson Wilkins Pediatric Endocrine Society. Hyperglycemic hyperosmolar syndrome in children: pathophysiological considerations and suggested guidelines for treatment. J. Pediatr. 2011 Jan;158(1):9-14, 14.e1-2.
3. Hockaday TD, Alberti KG. Diabetic coma. Clin Endocrinol Metab. 1972 Nov;1(3):751-88