Drug Shortage: Racepinephrine inhalation solution

This document provides mitigation strategies for handling ongoing drug shortages to participants in the Vizient® Pharmacy Program. Information is compiled from mitigation strategies of institutions that serve on the Vizient Clinical Pharmacy Council and is reviewed by a panel of pharmacists. For more information, contact pharmacyquestions@vizientinc.com.

Situation

This mitigation strategy is to serve as a resource if racepinephrine inhalation solution experiences supply disruptions due to shortages.

Background

Previous shortages of racepinephrine inhalation have caused concern. The sole manufacturer of both racepinephrine inhalation solution products, Asthmanefrin inhalation solution and Racepinephrine (S-2 inhalant) hydrochloride inhalation solution, is Nephron. This mitigation strategy is intended to provide guidance for present and future shortages.

Products affected[a]

Racepinephrine inhalation solution	▪ 2.25%, 0.5 mL vial, unit-dose 30 count; Asthmanefrin inhalation solution ▪ 2.25%, 0.5 mL vial, unit-dose 30 count; Racepinephrine (S-2 inhalant) hydrochloride inhalation solution

[a] Review ASHP Drug Shortages for the most current information

Novaplus Enhanced Supply (NES), a program created by Vizient, was established to enhance resiliency of supply in times of drug shortages. Access to additional inventory of select essential medications is available to members who: **1)** participate in the pharmacy program, and **2)** lack essential medications because a wholesale distributor has depleted all inventory of a medication. Access to the inventory request form is available on the NES program webpage. Please note, the medications available via the NES program are subject to change, and not all medications for which a mitigation strategy is published are available. For more information, contact pharmacyquestions@vizientinc.com.

Assessment

Racepinephrine inhalation is a bronchodilator indicated for temporary relief of mild symptoms (ie, wheezing, chest tightness, shortness of breath) of intermittent asthma. Data are also available to support its use in treatment of moderate to severe croup or airway edema in patients with epiglottitis. Additionally, racepinephrine is utilized clinically to relieve airway obstruction in patients with respiratory syncytial virus (RSV) bronchiolitis. The inhalation solution is administered via nebulization. Racepinephrine or racemic epinephrine is a 1:1 mixture of the D- and L-isomers of epinephrine. Epinephrine is the L-isomer of epinephrine and is also referred to as L-epinephrine. Hospitals and health systems are advised to have a mitigation strategy available in the event of a shortage of racepinephrine inhalation solution.

Recommendation

Must know information

- Prioritize racepinephrine inhalation for neonatal and pediatric patients.
- Utilize L-epinephrine nebulization or albuterol nebulization as an alternative, as clinically appropriate.
- If required, evaluate and operationalize the use of L-epinephrine for nebulization.
    - To prepare L-epinephrine for nebulization, withdraw 5 mL from an epinephrine 1 mg/mL vial and place the solution in an airway nebulizer.
- Implement changes (eg, creating alerts, pre-checking order sets) to direct providers to utilize albuterol nebulization, albuterol metered dose inhalers, or L-epinephrine nebulization, as clinically appropriate.

Clinical

1) Prioritize racepinephrine inhalation for neonatal and pediatric patients, and specifically indications for which there is literature support for use (ie, asthma, croup, epiglottitis, RSV).
2) Utilize L-epinephrine nebulization or albuterol nebulization as an alternative, as clinically appropriate. Utilize albuterol metered dose inhalers for adults and nebulizers for pediatric populations, or per institutional guidance.
3) Consult with institutional specialists and respiratory therapists to discuss the appropriate use criteria and alternatives to racepinephrine inhalation, and adjustments to order sets, as clinically appropriate.

Operational

1) If required, evaluate and operationalize the use of L-epinephrine for nebulization.
    - To prepare L-epinephrine for nebulization, withdraw 5 mL from an epinephrine 1 mg/mL vial and place the solution in an airway nebulizer.
    - In the absence of beyond use dating guidance in the package insert, defer to institutional policies and procedures for appropriate dating.
2) Implement electronic health record changes to prompt clinical interventions.
    - Implement changes (eg, creating alerts, pre-checking order sets) to direct providers to utilize albuterol nebulization, albuterol metered dose inhalers, or L-epinephrine nebulization, as clinically appropriate.
    - Review order sets to evaluate and assess if racepinephrine can be replaced by an alternative.
3) Evaluate utilization trends in automatic dispensing cabinets and shift inventory as able to prevent expiration and maximize availability where needed most.
4) If inventory becomes critically low, pull available stock to inpatient pharmacy for inventory control.

References

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