

# ASK A PHARMACIST

## The effect of pentamidine on glucose and addressing drug shortages

### What effect does pentamidine (Nebupent, Pentam, generic) have on glucose control?

— Veronica Brady, FNP-BC, BC-ADM, CDE

Pentamidine is used to treat and prevent *Pneumocystis jiroveci* pneumonia (commonly referred to as PCP or PJP) in immunocompromised patients. It is administered both intravenously and through inhalation, and alterations in glucose have been reported with both formulas. Although not occurring commonly, pentamidine has been associated with hypoglycemia, hyperglycemia, and development of non-insulin dependent diabetes mellitus (NIDDM). Hypoglycemia is thought to be due to increased basal hypersecretion of insulin from the beta cells of the pancreas and can occur early or at any point during therapy. Hyperglycemia and non-insulin dependent diabetes mellitus is caused by decreased insulin secretion, especially after a meal. As hyperglycemia is thought to be due to toxic effects of pentamidine on the beta cells, it typically occurs later in therapy.

Blood glucose should be monitored regularly in patients receiving pentamidine. Animal and retrospective human studies suggest that renal dysfunction may make a patient more likely to experience changes in glucose control; however,

baseline renal dysfunction is not a contraindication to receiving pentamidine. Hypoglycemia should be managed with oral or IV glucose products, as indicated by the clinical situation. Hyperglycemia or non-insulin dependent diabetes mellitus should be managed with oral diabetes medications or insulin as appropriate.

### What actions are being taken in regard to current shortages of chemotherapeutic agents?

— Carol J. DeVore, RN, BSN, OCN

Shortages of medications used in oncology are becoming increasingly common.<sup>1</sup> In response to the growing public awareness of this issue, two bills were introduced in Congress in 2011. These bills will require manufacturers to submit notification to the Food and Drug Administration (FDA) 6 months prior to a discontinuation or an interruption of distribution that may lead to a drug shortage, as well as require the Government Accountability Office (GAO) to study the causes of drug shortages.

Representatives from oncology organizations such as the American Society of Clinical Oncology (ASCO) have testified before Congress to highlight the need for action. These organizations also suggested using incentives to increase production of generic chemotherapy medications.

On October 31, 2011, President Obama signed an executive order directing the

FDA to take multiple actions to mitigate drug shortages, including: broaden the reporting of potential shortages, expedite review of new manufacturing sites and drug suppliers to prevent shortages, and work with the Department of Justice to investigate whether shortages have led to price gouging or illegal stockpiling of medications.<sup>2</sup> The White House also encouraged Congress to pass pending legislation to further strengthen the FDA's ability to prevent shortages of prescription drugs.

Information on shortages of individual medications is available from the FDA ([www.fda.gov/drugs/drugsafety/drug-shortages/ucm050792.htm](http://www.fda.gov/drugs/drugsafety/drug-shortages/ucm050792.htm)) and the American Society of Health-System Pharmacists (ASHP; [www.ashp.org/shortages](http://www.ashp.org/shortages)). The ASHP website includes links to information on both current and resolved drug shortages as well as those drugs no longer available. ■

### REFERENCES

1. Tobin J. Understanding and managing drug shortages in oncology. *Oncology Nurse Advisor*. 2011;2(3):24-29, 37. <http://www.oncologynurseadvisor.com/understanding-and-managing-drug-shortages-in-oncology/article/203077/>. Accessed November 28, 2011.
2. White House Office of the Press Secretary. We can't wait: Obama Administration takes action to reduce prescription drug shortages, fight price gouging. <http://www.whitehouse.gov/the-press-office/2011/10/31/we-can-t-wait-obama-administration-takes-action-reduce-prescription-drug>. Accessed November 15, 2011.



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