FDA ADVISORY
No. 20240030

16 JAN 2024

TO : ALL HEALTHCARE PROFESSIONALS

SUBJECT : Bupivacaine and Reports of Failed or Incomplete Spinal Anesthesia

Introduction

The Food and Drug Administration (FDA) collated a series of reports of lack of efficacy associated with the drug products containing *Bupivacaine* due to increasing reports of failed or incomplete spinal anesthesia. The reports came from healthcare professionals from different health facilities including private and public hospitals.

Scientific Discussion

Bupivacaine Hydrochloride is indicated to produce local or regional anesthesia or analgesia for surgery, diagnostic and therapeutic procedures and for obstetrical procedures lasting 1.5 to 3 hours. The dose of any local anesthetic varies with the procedure, area to be anesthetized, vascularity of the tissues, the number of neuronal segments to be blocked, the depth of anesthesia and the degree of muscle relaxation required, the duration of the anesthesia desired, individual tolerance, and the physical condition of the patient. Local anesthetics block the generation and the conduction of nerve impulses, by increasing the threshold for electrical excitation in the nerve, slowing the propagation of the nerve impulse, and by reducing the rate of rise of the action potential. In general, the progression of anesthesia is related to the diameter, myelination, and conduction velocity of affected nerve fibers.

Investigation

From November 2008 until October 2023, the FDA received a total of 139 reports of failed or incomplete spinal anesthesia or lack of efficacy to Bupivacaine products. Based on the reports, failed spinal anesthesia were managed by increasing dose, change of anesthetic product, resorting to general anesthesia. To ensure the quality of registered Bupivacaine products available in the market, the FDA consistently included Bupivacaine in its Annual Post Marketing Surveillance Plan (APMSP) since 2020. From the annual investigation and sampling, collected Bupivacaine products were tested and found conforming (passed) with the approved specifications. In addition, specific batches reported to have failed anesthesia were likewise tested and found conforming with the approved specifications. Based on this data, the reports of failed spinal anesthesia may not be associated with the product quality.

Safety Advisory

Based on literature review, there can be other factors that may contribute to the occurrence of failed spinal anesthesia. These factors include the abnormalities of the spine such as kyphosis, scoliosis, calcification of ligaments, consequences of osteoporosis, patient's resistance to a specific anesthetic, lumbar interspace selection, drug dosage, unsuccessful lumbar puncture, positioning of the patient and inadequate intrathecal spread and/or drug failure *(e.g., physicochemical incompatibility, inactive and resistance to local anesthetic solution).* It is advised that only trained professionals/clinicians with the necessary knowledge and experience should administer spinal anesthesia.

Healthcare professionals/clinicians are advised to consider the patient's physical condition and concomitant medications when deciding on the anesthetic dose. The lowest dose required for adequate anesthesia should be used.

Healthcare professionals are also encouraged to report any serious adverse reactions, including lack of efficacy or therapeutic failure related to Bupivacaine and Bupivacaine-containing products, to the FDA.

DR. SAMUEL A. ZACATE
Director General

20231221145210