

## **Lidocaine Bladder Instillation for Prevention of Autonomic Dysreflexia during Suprapubic Cystostomy Placement for Upper Spinal Cord Lesion**

**Introduction and Objective:** Autonomic dysreflexia (AD) is a common and potentially dangerous hypertensive response to stimulation below the level of injury occurs in patients with spinal cord injury at T6 or above. The purpose of this study was to determine whether lidocaine instillation limits AD during suprapubic puncture for cystostomy (SPC) placement.

**Materials and Methods:** Between January 1999 and March 2008, a total of 47 cases underwent cystostomy placement using the suprapubic puncture kit. Subjects were separated into four groups, non spinal cord injured group (non SCI group: 11 cases), lower spinal cord lesion group (Th7 or below: lower SCI group: 8 cases), upper spinal cord lesion without lidocaine instillation (upper SCI placebo group: 8 cases) and upper with lidocaine instillation (upper SCI lidocaine group: 20 cases). Systolic and diastolic blood pressure, heart rate and symptoms of autonomic dysreflexia were recorded. In upper lidocaine group, after the bladder was emptied by transurethral catheter, 1% lidocaine (20 mL) instilled into the bladder retained for 20 minutes prior to SPC placement under ultrasound guide. In upper SCI placebo group, 20 mL saline as placebo was instilled before SPC placement.

**Results:** The systolic blood pressure increased by 24, 22, 75 and 47 mmHg during SPC placement in non SCI group, lower SCI group, upper SCI-placebo group and upper SCI lidocaine group, respectively. The diastolic blood pressure increased by 6, 3, 32 and 27 mmHg, respectively. The systolic blood pressure for upper SCI placebo group had a significantly higher increase than those of any other groups. Although 63% of patients in upper SCI placebo group received intravenous nicardipine administration due to severe AD (Systolic blood pressure exceeded 200 mmHg) during procedure, only 15% in upper SCI lidocaine group received nicardipine administration ( $p=0.04$ ).

**Conclusions:** Lidocaine bladder instillation significantly limits autonomic dysreflexia response in susceptible upper spinal cord injured patients undergoing SPC placement.