

## ABSTRACT

This quantitative, descriptive study was conducted to compare the incidence of intraoperative hypotension in elderly patients administered hyperbaric spinal anesthetic to the incidence in elderly patients administered isobaric spinal anesthetic. These specific incidence rates were evaluated for elderly patients who had undergone non-emergent total hip arthroplasty surgery during a 2-year period from January 1, 2004 to December 31, 2005. Data were retrieved at a 325-bed medical center located in a northwestern Pennsylvania city during a retrospective review of charts. A purposive sampling technique was used to identify 50 patients—25 patients who had received hyperbaric spinal anesthetic and 25 patients who had received isobaric spinal anesthetic—for inclusion to the sample. Patient confidentiality was maintained throughout data retrieval, data analysis, and in the report of findings. There was no statistically significant difference in baseline systolic readings based on group assignment—based on what spinal solution was administered ( $t = 1.756$ ,  $df = 24$ ,  $p > .05$ ). There was a statistically significant difference found in mean intraoperative systolic pressure readings based on group assignment ( $t = -3.339$ ,  $df = 24$ ,  $p < .01$ ). The 25 patients in Group I—patients who received an isobaric spinal anesthetic solution—had a lower mean intraoperative systolic pressure reading than the 25 patients in Group H—patients who received a hyperbaric spinal anesthetic solution. In addition, the 25 patients in Group I experienced a statistically significantly greater drop in systolic pressure readings when compared to the 25 patients in Group H ( $t = 3.409$ ,  $df = 24$ ,  $p < .01$ ). Findings suggest that the density of spinal anesthetic solution can affect the incidence of intraoperative hypotension.