**Background:**

Hypotension is a common adverse event during spinal anesthesia (SPA) for cesarean delivery. Detection and treatment of it is an essential goal in anesthesia care. Discontinuous oscillometric blood pressure (Discontinuous BP) measurement is routinely applied in this patient population. Whereas rapid changes of BP after SPA may be missed by interval measurements (1). Recently, a continuous noninvasive monitoring device (Continuous BP) has been introduced into clinical routine. This device is based on continuous pressure recording via finger cuffs calibrated with a single oscillometric upper arm measurement. Acceptable agreement with invasive measurements could be demonstrated (ASA 2009, New Orleans, Oct. the 19th, poster session, hall E2, area F, A-750).

We hypothesise that (I) Continuous BP can be easily applied in women under SPA for cesarean section. (II) Lowest systolic BP can be detected only with the Continuous BP device, (III) Hypotensive episodes can be reliably detected only Continuous BP.

**Material and Methods:**

50 women scheduled for cesarean section under SPA were enrolled. BP was measured continuously (CNAP Monitor, CNSystems, Graz, Austria) and discontinuously every three minutes (Datex AS5, Datex, Helsinki, Finland). For every three minute interval the lowest systolic and mean BP of Continuous BP and Discontinuous BP as well as the overall lowest BP of both devices in the course of SPA were compared. Additionally, the number of identified hypotensive episodes (sys BP < 80mmHg) was compared. Statistics: unpaired t test and Chi square test, p<0.05.

**Results:**

50 patients were enrolled into the study. All patients demonstrated normal demographic data. Continuous BP was applied to all women without side effects or discomfort. Figure 1 shows a typical measurement. Table 1 demonstrates significant differences of systolic as well as mean BP of all three minute intervals with lower values for Continuous BP measurements (p < 0.05). Results of the comparison of absolute lowest BP within SPA are shown in figure 2. Continuous systolic and mean BP was significantly lower compared to Discontinuous BP measurements (p < 0.05). Hypotensive episodes were identified more often based on Continuous BP (458 of 1196 measurements) compared to Discontinuous BP (112 of 1196 measurements, p < 0.05).

**Discussion and conclusions:**

BP could be measured precisely by use of the Continuous BP device. Absolute lowest BP and lowest values within three minutes intervals were significantly lower in Continuous BP compared to Discontinuous BP. The number of identified hypotensive episodes was significantly higher when BP was measured continuously. Thus, rapid changes of BP in the course of SPA for cesarean section can be detected more precisely by the Continuous BP method. Anesthesia care of women scheduled for cesarean section under SPA may be improved by Continuous BP monitoring.


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