

A35 Analysis of the Decrease of the Patients' Pain After Regional Block in Post-anaesthesia Care Unit with a Subarachnoid Anaesthesia or a Balanced General Anaesthesia

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Introduction

With the advances in anaesthesia techniques, regional anaesthesia (RA) has gained a lot of attention in the medical field [1][2]. RA decreases the sensitivity of a specific region of the body, which brings several advantages when compared to general anaesthesia [1][3][4]. For instance, it presents reduced risk of complications (like bleeding or respiratory complications) and faster postoperative recovery, allowing an accelerated discharge of patients [4][3]. For these reasons, several authors defend the use of RA in surgeries whenever possible [4][3]. Subarachnoid anaesthesia (SAB) is one type of RA block, where anaesthesia is administered in the subarachnoid space[5][6]. This study aims to analyze the differences in the decrease of pain levels after regional block held at the post-anaesthesia care unit (PACU) between patients submitted to SAB and patients submitted to balanced general anaesthesia (BGA).

Methods

In this analysis, a database with collected information from a total of 46 patients in the postanaesthesia care unit of the Tondela-Viseu Hospital Center was used, to analyze the differences in the evolution of pain between the two anesthetic techniques, BGA and SAB.

Of these 46 patients, 5 were excluded from the analysis due to absence of pain at PACU admission, which could be indicative of any occurrence of bias in the collection of information. The patient's preanesthesia medical co-morbidities were evaluated using the ASA Physical Status Classification System [7]. Of the 41 patients in the study, none had life-threatening comorbidities, having been classified from ASA I to ASA III.

The statistical analysis was done using Rstudio v4.0.2. Since the sample size is relatively small in both groups (29 subjects in BGA group and 12 subjects in SAB group), to perform statistical tests it was preferential the use of non-parametric approach. Mann-Whitney test was used to compare the ages of the two groups. Fisher's exact tests were used to compared homogeneity between groups. The level of the pain was assessed using a numerical scale from 0 (no pain) to 10 (maximum pain) on admission in the PACU, 20 minutes after regional technique and 1 day after the regional technique. To evaluate the decrease of the pain was calculated the ratio between the level of pain at PACU admission and the level of pain 20 minutes after regional technique. It was considered that a significant decrease of pain corresponded to a ratio of 60% or more. P-values under 0.05 were considered statistically significant.

Results

The general sample characterization is briefly presented in Table 1. The average age of the patients was approximately 61 years, and there were no significant differences between the groups ($U = 174.5$, $p = 1$). The proportions between the groups of variables ASA, Specialty and Used Drug were matched, being validated using Fisher's exact tests (Table1). Homogeneity has not been validated for groups of variable Scheduling, with most of the patients having a programmed schedule to perform the surgery.

As shown in Fig.1, there were no significant differences in the ratios of the decrease of pain between BGA anaesthesia and SAB anaesthesia ($U = 145.5$, $p = 0.4203$). BGA anaesthesia group presented an average of approximately 61.30% reduction in pain between PACU admission and 20 minutes after the regional technique, and half of the patients in the study presented a decrease of 60% in pain. The SAB anaesthesia shows slightly higher values, with an average of 69.48% of decrease in pain, and a median of 61.25%.

Keywords:

Anaesthesia Techniques, General Anaesthesia, Pain diminution, Regional Anaesthesia, Subarachnoid Anaesthesia

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Conflict of interest:

The authors declare no conflict of interests.

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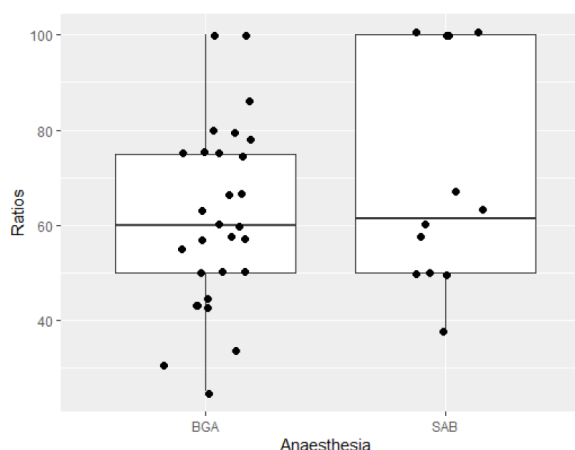


Figure 1 - Comparison of the distribution of decrease of pain at PACU admission and 20 minutes after regional technique (ratio) between the BGA and SAB. Each point represents one patient.

Table 1 – Characterization of the sample for age, ASA, Specialty, Scheduling and Used Drug

Variables	Total (n=41, 100%)	BGA (n=29, 70.73%)	SAB (n=12, 29.27%)	BGA vs SAB, P-value (Statistic)
Age ($\pm$ SD)	61.20 ($\pm$ 17.39)	61.24 ($\pm$ 17.50)	61.08 ($\pm$ 17.90)	1 (U=174.5)
ASA				0.612
I:	1 (2.44%)	1 (2.44%)	0 (0.00%)	
II:	29 (70.73%)	19 (46.34%)	10 (24.39%)	
III:	11 (26.83%)	9 (21.95%)	2 (4.88%)	
Specialty				0.457
Orthopedics:	30 (73.17%)	20 (48.78%)	10 (24.39%)	
Other:	11 (26.83%)	9 (21.95%)	2 (4.88%)	
Scheduling				0.004
Urgent:	8 (19.51%)	2 (4.88%)	6 (14.64%)	
Scheduled:	33 (80.49%)	27 (65.85%)	6 (14.64%)	
Used Drug				0.702
Ropivacaine:	32 (78.05%)	22 (53.66%)	10 (24.39%)	
Levobupivacaine:	9 (21.25%)	7 (17.07%)	2 (4.88%)	

Table 2 shows the frequencies of the type of pain at PACU admission, 20 minutes and 1 day after the regional block. Although there were patients that presented severe pain in the admission in PACU, it is demonstrated that there were no patients with severe pain after the regional technique, with most of them presenting mild pain for both anaesthesias. There is also a decrease in the number of patients of the BGA group with moderate pain in the day after the surgery when compared to 20 minutes after the performance. In the case of SAB anaesthesia there were no patient with moderate pain.

Table 2 - Frequencies of the pain classified in mild, moderate, and severe pain, of the patients at PACU admission, 20 minutes after regional technique and 1 day after regional technique by type of anaesthesia.

		Mild Pain (0-3)	Moderate pain (4-7)	Severe Pain (>7)
Admission in PACU	BGA	1 (3.45%)	17 (58.62%)	11 (37.93%)
	SAB	3 (25%)	6 (50%)	3 (25%)
20min after regional technique	BGA	21 (72.41%)	8 (27.59%)	0 (0.00%)
	SAB	11 (91.67%)	1 (8.33%)	0 (0.00%)
1 day after regional technique	BGA	23 (79.31%)	6 (20.69%)	0 (0.00%)
	SAB	12 (100%)	0 (0.00%)	0 (0.00%)

Discussion

Even though the differences between the ratios of pain decrease in BGA and SAB are not statistically significant, the mean of the decrease of pain in the patients submitted to SAB is slightly higher when compared to the patients submitted to BGA. In the same way, 1 day after the surgery, the total of patients of the SAB group were with mild pain, while 79.31% of the BGA group classified the pain as mild and 6 patients (20.69%) were still with moderate pain, appealing to the possibility of SAB being more effective in controlling pain.

Conclusion

The results indicates that there is a possibility that SAB is more effective in the reduction and control of pain. However, more data is needed to be able to make more solid decisions, since there were more patients in the BGA group than in the SAB group.

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