Thoracic paravertebral block assessed with 3D Cone Beam Computed tomography for transarterial liver chemoembolization. Part two: Clinical effectiveness and complications

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Background and Goal of Study: “Post embolization syndrome” (severe pain, nausea and vomiting) is the main cause of discontinuation of transarterial chemoembolization (TACE) for treatment of cancer liver lesions, which usually requires several sessions. The sympathetic thoracic fibers are responsible of these symptoms. Bilateral TPVB allows to block visceral sympathetic innervation, in a selective way. TPVB has a low rate of adverse effects and contraindications. Here we present the analgesic efficacy of bilateral TPVB for TACE. In Part I, we described image analysis of diffusion of the LA after TPVB US-guided TPVB followed by 3D cone beam CT.

Material and methods: Observational prospective study. Institutional Ethics Committee and patient informed consent was obtained. 76 bilateral TPVB were performed in 44 patients (>18 yo, ASA II-III) scheduled for TACE. Procedure: standard monitoring and conscious sedation propofol based. In the prone position, bilateral US single-shot TPVB at the 6th-7th thoracic vertebral level was performed. 5 ml of lomeprol 350 + 5 ml of PS + 5 ml of Ropivacain 1% per side were injected. Somatosensory block extension was evaluated 20 min afterwards by pinprick (adequate level was considered from 5th to 12th). Intraoperative pain was evaluated by visual analogue scale (VAS) every 15 min. Fentanyl 50 microg boluses were administered if VAS > 4. Procedural complications and adverse effects during were recorded.

Results: 69 TACE were included in the analysis; 7 TACE were excluded due to CT image loss. There was no somatosensory block (Table 1) or it was inadequate (evaluated with pinprick) in 97% (right side) and 95.7% (left side) of cases . There was no correlation between radiological PV and somatosensory extension, neither with fentanyl consumption (Figures 1-2). Analgesia was adequate to complete the procedure in all cases (Table 2, Figure 3). Consumption of fentanyl is shown in Table 3. Complication are shown in Table 4. there were no major complications (pneumothorax or systemic LA toxicity). All patients completed the treatment.

Somatosensory Block	TPVB, n (%) Right side	TPVB n (%) Left side
Adequate	2 (2.9 %)	3 (4.3)
Not adequate	31 (44.9%)	32 (46.4)
Without level	36 (52.2%)	34 (49.3)

Table 1. Quality of somatosensory block

VAS (0-10)	0' (n = 69)	15' (n =69)	30' (n = 69)	45' (n = 51)	60' (n = 22)
Mild (0-3)	68 (98.6%)	63 (91.3 %)	62 (89.9%)	46 (90.2%)	19 (86.4%)
Moderate (4-6)	0 (0%)	3 (4.3%)	5 (7.2%)	3 (5.9%)	1 (4.6%)
Intense (7-10)	1 (1.4%)	3 (4.3%)	2 (2.9%)	2 (3.9%)	2 (9.%)

Table 2. VAS during TACE

Figure 1. Radiological PV spread and sensory spread relationship

Figure 2. Radiological PV spread and fentanyl boluses relationship

Figure 3. VAS during TACE

Fentanyl boluses	TACE n (%) n=69
0	54 (78.3 %)
1 (50 microg)	6 (8.7%)
2 (100 microg)	9 (13%)

Table 3. Rescue Fentanyl boluses

Complication	n (%) n =69
Hypotension	0 (0 %)
Bradycardia	0 (0 %)
Pneumothorax	0 (0 %)
LA toxicity	0 (0 %)
Backache (Puncture site)	4 (5.8 %)

Table 4. Complications

Conclusions:

- Bilateral TPVB is an effective, safe anaesthetic procedure for TACE, regardless of somatic blockade level, probably because the target is sympathetic block.
- Somatosensory block assessed by pinprick doesn't correlate with intra-procedural analgesia neither PV spread CT analysis, therefore It doesn't seem appropriate to evaluate TPVB clinical effectiveness.

Bibliography.

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