



Kearns, R.J. and Young, S.J. (2011) Transversus abdominis plane blocks; a national survey of techniques used by UK obstetric anaesthetists. *International Journal of Obstetric Anesthesia*, 20(1), pp. 103-104. (doi:[10.1016/j.ijoa.2010.08.005](https://doi.org/10.1016/j.ijoa.2010.08.005))

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Deposited on: 04 September 2018

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1 **Transversus abdominis plane (TAP) blocks; a National survey of techniques used by**  
2 **UK obstetric anaesthetists**

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36 One anxiety held by parturients undergoing caesarean section delivery is the presence of intra  
37 and post-operative pain.<sup>1</sup> Good analgesia with a minimal side effect profile is desirable if  
38 early mobility, bonding with the infant and prevention of chronic pain are to be achieved.  
39 There has been recent interest in the use of the Transversus Abdominis Plane (TAP) block for  
40 postoperative analgesia after caesarean section (CS).<sup>2</sup> More recently, ultrasound has been  
41 investigated as a means of providing reliable placement of local anaesthetic when performing  
42 TAP blocks for CS.<sup>3</sup> There is at present no universal agreement as to the optimal technique  
43 for TAP blockade, and both landmark and ultrasound guided methods continue to be  
44 evaluated. We conducted a survey to investigate the use of TAP blocks and any variations in  
45 technique and practice in UK based obstetric anaesthetists.

46

47 Following approval by the Obstetric Anaesthetists' Association (OAA) surveys  
48 subcommittee, a postal questionnaire with a covering letter (survey no. 92, Appendix 1), was  
49 sent to all 1169 UK based OAA consultant members in September 2009 using the OAA  
50 mailing database. Questions related to the performance of TAP blocks in obstetric  
51 anaesthetic practice.

52

53 639 questionnaires were returned giving a response rate of 54.7%. Of these, 138 (21.6%)  
54 used TAP blocks in their obstetric practice. Although this survey attracted a high number of  
55 respondents, the response rate was suboptimal precluding accurate analysis of TAP block use  
56 amongst UK obstetric anaesthetists. A major limitation of this study relates to the probability  
57 that anaesthetists using TAP blocks were more likely to respond to the survey than those who  
58 did not, creating a significant bias towards TAP block use in the results. Assuming this to be  
59 the case, the true prevalence of TAP block users amongst UK obstetric anaesthetists could be  
60 estimated to lie between 11.8% (assuming all users responded) and 21.6% (assuming users  
61 and non-user responded equally). Clearly, this is an estimate and further work is required to  
62 give a more accurate figure. Despite these limitations, we identified a large cohort of TAP  
63 block users amongst UK obstetric anaesthetists and gained an insight into current practice.

64

65 The most common indication for TAP block was CS under general anaesthesia (131/138,  
66 94.9%). Just over a quarter of respondents (37/138, 26.8%) used TAP blocks for CS under  
67 neuraxial blockade. Regional block needles (72.5%) followed by Tuohy needles (13.8%)  
68 were most commonly used to perform the TAP block. Bupivacaine or levo-bupivacaine were  
69 used in all but one case and mean dose and volume of local anaesthetic was 122mg (range 75  
70 - 225mg) and 42ml (range 20 - 80ml) respectively. Only 10.1% of TAP block users had

71 received formal training in TAP block performance. 64.5% of TAP block users obtained  
72 consent and 62.3% used ultrasound guidance.

73

74 The use of ultrasound, a modality requiring additional expertise and equipment and which  
75 may prolong the time taken to perform the block, was an unexpected finding. Factors such  
76 as; increased use and availability of ultrasound, improved sonographic skills and a reluctance  
77 to perform the landmark technique in patients with high BMI may have affected this.<sup>4</sup>  
78 Complications including hepatic injury have been reported with the landmark technique<sup>5</sup> and  
79 ultrasound guidance may provide some safety benefits in this regard. The risk of local  
80 anaesthetic toxicity must also be considered, particularly in those patients with low body  
81 weight and who have received local anaesthetic for epidural analgesia or anaesthesia. Lipid  
82 rescue therapy should be readily available and familiar to staff in areas where TAP blocks, as  
83 well as any other regional anaesthetic techniques, are performed.

84

85 Although this study was unable to define an exact prevalence of TAP block use in UK  
86 obstetric anaesthetists, it suggests that TAP block users are in the minority. Our results  
87 suggest that formal training remains suboptimal, and if adverse events are to be avoided, this  
88 should be addressed. Our finding of a preference to use TAP blocks after CS under general  
89 anaesthesia is in keeping with current evidence which suggests that TAP blocks may not be  
90 of benefit in patients receiving long acting intrathecal opioids<sup>6</sup> (as recommended by NICE).<sup>7</sup>  
91 Further work is required to evaluate the role of TAP blocks in patients undergoing caesarean  
92 delivery under long acting intrathecal opiate by both intrathecal and epidural routes and to  
93 investigate the optimal way in which to perform TAP blocks.

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*This survey has the OAA 'Seal of Approval'  
Survey No: 92 approved 2009-06/10*

144 **National Survey of the Use of Transversus Abdominis Plane Blocks**  
145 **in Obstetric Anaesthesia**

148 **1. Do you use TAP blocks to provide analgesia for LSCS?**

149 Yes

150 No

153 **2. Do you use TAP blocks in your general anaesthetic practice?**

154 Yes

155 No

157 **If your answer to Question 1 is no, we thank you for your time but there is no**  
158 **need to complete the remainder of the questionnaire.**

159 **If your answer to Question 1 is yes, please proceed to the next question**

161 **3. Do you routinely use TAP blocks for analgesia for LSCS under:**

162 Regional Anaesthesia

163 General Anaesthesia

166 **4. Do you routinely use TAP blocks for:**

167 Elective LSCS

168 Emergency LSCS

171 **5. Do you routinely ask for consent for this procedure?**

172 Yes

173 No

176 **6. When do you perform the TAP block?**

177 Before start of surgery

178 After skin closure

181 **7. Do you routinely use ultrasound when performing TAP blocks?**

182 Yes

183 No

186 **8. Which type of needle do you use?**

187 Regional Block needle

188 Tuohy needle

189 Other  please specify .....

190

191

192 **9. What volume, dose and type of local anaesthetic do you use?**

193 (e.g. Total 50ml L-Bupivacaine 0.25%)

194

195 .....

196

197

198 **10. If performing TAP blocks for LSCS, what other analgesia do you give**

199 **peri-operatively? (please tick all that apply)**

200 Morphine

201 Paracetamol

202 NSAIDS

203 Other .....

204

205

206 **11. If performing TAP blocks for LSCS, what other analgesia do you prescribe**

207 **post-operatively? (please tick all that apply)**

208 PCA morphine

209 Subcutaneous morphine

210 Intra-muscular morphine

211 Paracetamol

212 Codeine

213 Dihydrocodeine

214 NSAIDs

215 Other .....

216

217

218 **12. Have you had formal training in performing TAP blocks?**

219 Yes

220 No

221

222

223 **13. Have you experienced any complications when performing this procedure?**

224 Yes

225 No

226 If yes, please specify.....

227

228

229 **14. In your experience, do you think TAP blocks provide good analgesia after**  
230 **LSCS?**

231 Yes

232 No

233

234

235

236 Thank you for your time

237

238