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Appendix

Definitions

The PROMIS Global – 10^{14,15} is a global health assessment tool that determines a patient's function, symptoms and healthcare related quality of life (HRQoL). This survey yields mental and physical component scores.

The BRS score¹⁶ is a six question survey utilized to assess the ability of a patient to navigate stressful situations and is an overall assessment of resilience. It is scored from 1 to 5 with 1 denoting low resilience and 5 denoting high resilience.

The PEG score is a validated three question survey that is adapted from the Brief Pain Inventory and can be utilized to assess a patients pain on a weekly basis.¹⁷ It is scored from 0 to 10 with a score of 0 indicative of the least pain and least interference of pain in the enjoyment of life and activities while 10 denotes maximal pain and interference.

The OBAS score²⁰ is a survey that assesses both pain intensity and opioid symptom distress (vomiting, itching, sweating, freezing, dizziness) while factoring in patient satisfaction with pain control. The OBAS score ranges from 0 to 28 and a lower score reflects a higher benefit of pain control.

REFERENCES

- 1 Kawanishi, R. *et al.* Perineural but not systemic low-dose dexamethasone prolongs the duration of interscalene block with ropivacaine: a prospective randomized trial. *Local Reg Anesth* **7**, 5-9, doi:10.2147/LRA.S59158 (2014).
- 2 Abdallah, F. W., Halpern, S. H., Aoyama, K. & Brull, R. Will the Real Benefits of Single-Shot Interscalene Block Please Stand Up? A Systematic Review and Meta-Analysis. *Anesth Analg* **120**, 1114-1129, doi:10.1213/ANE.000000000000688 (2015).
- 3 Kim, J. H. *et al.* Interscalene brachial plexus bolus block versus patient-controlled interscalene indwelling catheter analgesia for the first 48 hours after arthroscopic rotator cuff repair. *J Shoulder Elbow Surg* **27**, 1243-1250, doi:10.1016/j.jse.2018.02.048 (2018).
- 4 Namdari, S. *et al.* Interscalene Block with and without Intraoperative Local Infiltration with Liposomal Bupivacaine in Shoulder Arthroplasty: A Randomized Controlled Trial. *J Bone Joint Surg Am* **100**, 1373-1378, doi:10.2106/JBJS.17.01416 (2018).
- 5 Jadon, A. *et al.* Interscalene brachial plexus block for shoulder arthroscopic surgery: Prospective randomised controlled study of effects of 0.5% ropivacaine and 0.5% ropivacaine with dexamethasone. *Indian J Anaesth* **59**, 171-176, doi:10.4103/0019-5049.153039 (2015).

- 6 Kumar, S., Palaria, U., Sinha, A. K., Punera, D. C. & Pandey, V. Comparative evaluation of ropivacaine and bupivacaine with dexamethasone in supraclavicular brachial plexus block for postoperative analgesia. *Anesth Essays Res* **8**, 202-208, doi:10.4103/0259-1162.134506 (2014).
- 7 Tandoc, M. N., Fan, L., Kolesnikov, S., Kruglov, A. & Nader, N. D. Adjuvant dexamethasone with bupivacaine prolongs the duration of interscalene block: a prospective randomized trial. *J Anesth* **25**, 704-709, doi:10.1007/s00540-011-1180-x (2011).
- 8 Pehora, C., Pearson, A. M., Kaushal, A., Crawford, M. W. & Johnston, B. Dexamethasone as an adjuvant to peripheral nerve block. *Cochrane Database Syst Rev* **11**, CD011770, doi:10.1002/14651858.CD011770.pub2 (2017).
- 9 Sakae, T. M., Marchioro, P., Schuelter-Trevisol, F. & Trevisol, D. J. Dexamethasone as a ropivacaine adjuvant for ultrasound-guided interscalene brachial plexus block: A randomized, double-blinded clinical trial. *J Clin Anesth* **38**, 133-136, doi:10.1016/j.jclinane.2017.02.004 (2017).
- 10 Cummings, K. C., 3rd *et al*. Effect of dexamethasone on the duration of interscalene nerve blocks with ropivacaine or bupivacaine. *Br J Anaesth* **107**, 446-453, doi:10.1093/bja/aer159 (2011).
- 11 Woo, J. H., Kim, Y. J., Kim, D. Y. & Cho, S. Dose-dependency of dexamethasone on the analgesic effect of interscalene block for arthroscopic shoulder surgery using ropivacaine 0.5%: A randomised controlled trial. *Eur J Anaesthesiol* **32**, 650-655, doi:10.1097/EJA.0000000000000213 (2015).
- 12 *Pharmaceuticals P EXPAREL (bupivacaine liposome injectable solution)[Highlights of Prescribing Information]* San Diego, California 2021. Accessed Jan 30, 2021., <https://www.exparel.com/hcp/EXPAREL_Package_Insert_CBE-15_Jan_2021.pdf> (
- 13 Daabiss, M. American Society of Anaesthesiologists physical status classification. *Indian J Anaesth* **55**, 111-115, doi:10.4103/0019-5049.79879 (2011).
- 14 Cella, D. *et al*. The Patient-Reported Outcomes Measurement Information System (PROMIS): progress of an NIH Roadmap cooperative group during its first two years. *Med Care* **45**, S3-S11, doi:10.1097/01.mlr.0000258615.42478.55 (2007).
- 15 Hays, R. D., Bjorner, J. B., Revicki, D. A., Spritzer, K. L. & Cella, D. Development of physical and mental health summary scores from the patient-reported outcomes measurement information system (PROMIS) global items. *Qual Life Res* **18**, 873-880, doi:10.1007/s11136-009-9496-9 (2009).
- 16 Smith, B. W. *et al*. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med* **15**, 194-200, doi:10.1080/10705500802222972 (2008).
- 17 Krebs, E. E. *et al*. Development and initial validation of the PEG, a three-item scale assessing pain intensity and interference. *J Gen Intern Med* **24**, 733-738, doi:10.1007/s11606-009-0981-1 (2009).
- 18 Gadsden, J. & Long, W. J. Time to Analgesia Onset and Pharmacokinetics After Separate and Combined Administration of Liposome Bupivacaine and Bupivacaine HCl: Considerations for Clinicians. *Open Orthop J* **10**, 94-104, doi:10.2174/1874325001610010094 (2016).
- 19 Burkett-St Laurent, D., Chan, V. & Chin, K. J. Refining the ultrasound-guided interscalene brachial plexus block: the superior trunk approach. *Can J Anaesth* **61**, 1098-1102, doi:10.1007/s12630-014-0237-3 (2014).
- 20 Cofield, R. H. Subscapular muscle transposition for repair of chronic rotator cuff tears. *Surg Gynecol Obstet* **154**, 667-672 (1982).

- 21 Fuchs, B., Weishaupt, D., Zanetti, M., Hodler, J. & Gerber, C. Fatty degeneration of the muscles of the rotator cuff: assessment by computed tomography versus magnetic resonance imaging. *J Shoulder Elbow Surg* **8**, 599-605, doi:10.1016/s1058-2746(99)90097-6 (1999).
- 22 Lehmann, N. et al. Development and longitudinal validation of the overall benefit of analgesia score: a simple multi-dimensional quality assessment instrument. *Br J Anaesth* **105**, 511-518, doi:10.1093/bja/aeq186 (2010).
- 23 Patel, M. A. et al. Brachial Plexus Block with Liposomal Bupivacaine for Shoulder Surgery Improves Analgesia and Reduces Opioid Consumption: Results from a Multicenter, Randomized, Double-Blind, Controlled Trial. *Pain Med* **21**, 387-400, doi:10.1093/pm/pnz103 (2020).
- 24 Centers for Disease Control and Prevention. Calculating total daily dose of opioids for safer dosage., <https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf>. (Accessed January 30, 2021)> (
- 25 Judd, C. M., Westfall, J. & Kenny, D. A. Treating stimuli as a random factor in social psychology: a new and comprehensive solution to a pervasive but largely ignored problem. *J Pers Soc Psychol* **103**, 54-69, doi:10.1037/a0028347 (2012).
- 26 Myles, P. S. et al. Measuring acute postoperative pain using the visual analog scale: the minimal clinically important difference and patient acceptable symptom state. *Br J Anaesth* **118**, 424-429, doi:10.1093/bja/aew466 (2017).
- 27 Namdari, S. et al. Randomized Controlled Trial of Interscalene Block Compared with Injectable Liposomal Bupivacaine in Shoulder Arthroplasty. *J Bone Joint Surg Am* **99**, 550-556, doi:10.2106/JBJS.16.00296 (2017).
- 28 Ilfeld, B. M., Donohue, M. C. & Swisher, M. W. Response to: 'erector spinae plane and paravertebral blocks have similar opioid-sparing effects following breast surgery. *Reg Anesth Pain Med*, doi:10.1136/rapm-2020-101441 (2020).
- 29 McGlothlin, A. E. & Lewis, R. J. Minimal clinically important difference: defining what really matters to patients. *JAMA* **312**, 1342-1343, doi:10.1001/jama.2014.13128 (2014).
- 30 Revicki, D., Hays, R. D., Cella, D. & Sloan, J. Recommended methods for determining responsiveness and minimally important differences for patient-reported outcomes. *J Clin Epidemiol* **61**, 102-109, doi:10.1016/j.jclinepi.2007.03.012 (2008).
- 31 Simovitch, R., Flurin, P. H., Wright, T., Zuckerman, J. D. & Roche, C. P. Quantifying success after total shoulder arthroplasty: the minimal clinically important difference. *J Shoulder Elbow Surg* **27**, 298-305, doi:10.1016/j.jse.2017.09.013 (2018).
- 32 Vandepitte, C. et al. Addition of Liposome Bupivacaine to Bupivacaine HCl Versus Bupivacaine HCl Alone for Interscalene Brachial Plexus Block in Patients Having Major Shoulder Surgery. *Reg Anesth Pain Med* **42**, 334-341, doi:10.1097/AAP.0000000000000560 (2017).
- 33 Baessler, A. M., Moor, M., Conrad, D. J., Creighton, J. & Badman, B. L. Single-Shot Liposomal Bupivacaine Reduces Postoperative Narcotic Use Following Outpatient Rotator Cuff Repair: A Prospective, Double-Blinded, Randomized Controlled Trial. *J Bone Joint Surg Am* **102**, 1985-1992, doi:10.2106/JBJS.20.00225 (2020).
- 34 Joshi, G. P. et al. Techniques for periarticular infiltration with liposomal bupivacaine for the management of pain after hip and knee arthroplasty: a consensus recommendation. *J Surg Orthop Adv* **24**, 27-35 (2015).

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LIPOSOMAL BUPIVACAINE PLUS BUPIVACAINE VERSUS ROPIVACAINE PLUS DEXAMETHASONE BRACHIAL PLEXUS BLOCKADE FOR ARTHROSCOPIC ROTATOR CUFF REPAIR. AN UNBLINDED RANDOMIZED CONTROLLED TRIAL

<http://dx.doi.org/10.2106/JBJS.OA.21.00122>

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35 Kim, K., Elbuluk, A., Yu, S. & Iorio, R. Cost-effective peri-operative pain management: assuring a happy patient after total knee arthroplasty. *Bone Joint J* **100-B**, 55-61, doi:10.1302/0301-620X.100B1.BJJ-2017-0549.R1 (2018).

36 Breivik, H. *et al.* Assessment of pain. *Br J Anaesth* **101**, 17-24, doi:10.1093/bja/aen103 (2008).