Introduction: The ultrasound-guided infracavicular block (ICB) allows adequate anesthesia for elbow, wrist and hand surgery. Recent studies favor a single injection posterior to the axillary artery over multiple injections.\textsuperscript{1,2} However, the complications related to the single injection ICB and its success rate are not well known. We hypothesized that the ultrasound-guided ICB with a single injection is safe and has a high success rate.

Methods: In this retrospective cohort study conducted in two academic hospitals, all ultrasound-guided single injection ICB performed over a 2-year period (2008-2010) during opening hours were identified using a local database. Patients under 18 yo and continuous ICB were excluded. The primary endpoint was the rate of complications and the secondary endpoint was the success rate of the ICB. Data collection was performed by 3 investigators using a standardized case report form. Demographic data, data related to potential complications and the expertise of the clinician performing the ICB were collected in patients' charts. Each patient was contacted by phone to complete, after informed consent, a brief standardized questionnaire looking for potential late complications. All symptoms or signs, objectives or subjectives, were considered as potential complications. The relation of all potential neurological complications with the ICB was then evaluated by two experts in regional anesthesia using a Likert scale (1: certainly related to the ICB, 2: probably, 3: possibly; 4: undecided; 5: possibly, 6: probably, 7: certainly not related to the ICB). All cases scoring 3 or less were then evaluated by a neurologist. The ICB was considered successful if surgery was performed without requiring additional block/infiltration or general anesthesia. Clinicians were considered experts if they had completed at least 30 single injection ultrasound-guided ICB. Descriptive statistics were performed and exact 95% confidence intervals calculated (Fisher's test). Local REB approval was obtained.

Results: A total of 627 ICB were reviewed (615 patients). Among those, 495 ICB (79%) were evaluated by phone interview. Patients were mostly men with a mean age of 53 and a BMI of 25.8 having undergone plastic or orthopedic surgery. Mepivacaine 1.5% was the most often used local anesthetic (96% of cases) with a median volume of 30 mL (25-75\%IQR 30-38). We identified 131 potential neurological complications: 7 of them were deemed to be associated with the ICB (score ≤ 3) and were presented to a neurologist. Among those, 4 were retained as possibly linked to the ICB, but underwent complete resolution of symptoms at time of evaluation. The 3 remaining cases were not linked to the ICB (2 patients with a normal electromyogram; 1 patient with symptoms considered related to the surgery following repeat interview). Two possible cases of local anesthetic toxicity were observed. The success rate was 93% (95\%CI 91-95\%) and was comparable between experts and non experts (94 vs 93%).

Discussion: In this retrospective cohort study, we observed very few complications associated with a single injection ultrasound-guided ICB and a high success rate, regardless of the expertise. Thus, this technique seems safe, reliable, and easy to perform.