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Laterality of a short-term peripheral intravenous catheter does not affect complications or patient satisfaction: a subanalysis of the One Million Global Peripheral Intravenous Catheter Study

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To the Editor—The One Million Global Peripheral Intravenous Catheter Study (OMG PIVC) was the largest prevalence study to date on the use and management of short-term peripheral intravenous catheters (PIVC) in adult and pediatric inpatients from 49 countries.¹ The authors found that many PIVCs were placed in areas of flexion, were symptomatic or idle, had suboptimal dressings, or lacked adequate documentation, which suggested an inconsistency between recommendations in PIVC management and current practice.¹

Although few data are available on the effect of laterality on (peripherally inserted) central venous catheters,^{2–4} information is completely lacking for PIVCs. Thus, we supplemented the data from the 302 PIVCs our center contributed to the OMG PIVC study with additional variables on PIVC laterality and patient handedness. All other variables were collected as described in detail in the OMG PIVC study.¹

Our aim was to correlate the laterality of PIVCs placed in the upper extremity with the outcome rates of complications and patient satisfaction. We included 291 of 302 PIVCs (96.4%) that were inserted at the upper extremity and where information on laterality was available. Characteristics such as handedness, bed days at the time of data collection (April 15, 2015) and PIVC insertion position at the upper extremity (wrist and/or hand versus forearm and/or elbow) did not differ significantly depending on the laterality of the PIVC (Table 1). Also, PIVC outcomes and patient satisfaction did not depend on PIVC laterality (Table 1). Based on this, we conclude that laterality

should not influence the decision regarding where to insert a PIVC at the upper extremity.

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Table 1. Characteristics and Outcomes of Peripheral Intravenous Catheters Correlated With Laterality

| Variable | Right Upper Extremity, No. (%) | Left Upper Extremity, No. (%) | <i>P</i> Value ^a |
|-------------------------------------------------|-----------------------------------|----------------------------------|--------------------------------|
| Total | 153 | 138 | |
| Baseline characteristics | | | |
| Bed days on study day, median (IQR) | 2 (1–3) | 2 (1–3) | .26 |
| Handedness | | | |
| | | | .23 |
| Right | 141 (92.2) | 120 (87.0) | |
| Left | 7 (4.6) | 8 (5.8) | |
| Ambidexter | 2 (1.3) | 1 (0.7) | |
| NA | 3 (2.0) | 9 (6.5) | |
| Position, forearm or elbow | 83 (54.2) | 68 (49.3) | .47 |
| PIVC assessment outcomes | | | |
| Pain/tenderness on palpation | 10 (6.5) | 5 (3.6) | .39 |
| Redness > 1 cm from insertion site | 1 (0.7) | 1 (0.7) | 1 |
| Swelling > 1 cm from insertion site | 3 (2.0) | 2 (1.4) | 1 |
| Purulence | 0 (0.0) | 0 (0.0) | NA |
| Itching/rash under dressing | 0 (0.0) | 1 (0.7) | .96 |
| Blistering/skin tears under dressing | 0 (0.0) | 0 (0.0) | NA |
| Bruising/dried blood around PIVC | 7 (4.6) | 6 (4.3) | 1 |
| Palpable hard vein cord beyond tip | 0 (0.0) | 0 (0.0) | NA |
| Streak/red line along vein | 0 (0.0) | 0 (0.0) | NA |
| Induration/hardness of tissue > 1 cm | 0 (0.0) | 1 (0.7) | .9 |
| Leaking PIVC | 0 (0.0) | 0 (0.0) | NA |
| Extravasation/Infiltration | 0 (0.0) | 0 (0.0) | NA |
| Blood in line | 6 (10.5) | 12 (8.7) | .7 |
| Dislodgement of PIVC | 0 (0.0) | 0 (0.0) | NA |
| Any noticeable outcome | 31 (20.3) | 24 (17.4) | .64 |
| Patient satisfaction (self-assessment) | | | |
| Experience with PIVC, median (IQR) ^b | 9 (7–10) | 9 (8–10) | .54 |

Note. NA, not available; PIVC, peripherally inserted venous catheter.

^bLikert scale response: 0 = worst possible; 10 = best possible.

^aDetermined using the χ^2 and Mann-Whitney U tests, as appropriate.