Conversely, the Royal College of Obstetricians and Gynaecologists (RCOG) does not recommend anti-D immunoglobulin prior to 12 weeks' gestational age for miscarriage, given there is no instrumentation of the uterus (RCOG LOE 3/4, "non-analytical studies, expert opinion").[4]

Sydney E. Hendry, MD
University of North Carolina FPRP
Chapel Hill, NC
UPMC St. Margaret
Pittsburgh, PA

Nadia A. Kudla, PharmD
Stephen A. Wilson, MD, MPH
UPMC St. Margaret
Pittsburgh, PA

1. Karanth L, et al. *Cochrane Database Syst Rev.* 2013; (3):CD009617. **[STEP 2]**
2. American College of Obstetrics and Gynecology. *Int J Gynaecol Obstet.* 1999; 66(1):63–70. **[STEP 5]**
3. Fung KFK, et al. *J Obstet Gynaecol Can.* 2003; 25(9):765–773. **[STEP 5]**
4. Royal College of Obstetricians and Gynaecologists. *RCOG Green-top Guideline No. 22.* 2011;22:1–14. https://www.rcog.org.uk/enguidelines-research-services/guidelines/gtg22. **[STEP 4]**

How often do you need to change a peripheral IV line?

Evidence-Based Answer

Peripheral catheters can be replaced as clinically indicated with no effect on the incidence of complications in adults (SOR: **A**, consistent RCTs). Current guidelines from the Centers for Disease Control and Prevention (CDC) recommend replacing peripheral catheters more frequently than every 72 to 96 hours (SOR: **C**, expert opinion supported by limited evidence).

A recent nonblinded, RCT of 3,283 hospitalized patients evaluated the occurrence of phlebitis in a clinically indicated peripheral IV replacement group or a 72 hours routine replacement group.[1] Mean IV catheter dwell time was 99 hours when replaced as clinically indicated and 70 hours when routinely replaced. Phlebitis occurrence was the same for the patients both groups (7% vs 7%; risk ratio [RR] 1.1; 95% CI, 0.83–1.4).

Another nonblinded RCT analyzed the differences in complication rates—including phlebitis, infiltration, occlusion, accidental removal, local infection, and IV device-related blood stream infection—between a group undergoing routine replacement at 72 hours and a clinically indicated group among 362 hospitalized patients with a peripheral IV.[2] No difference was noted in complication rates (66 vs 68 per 1,000 IV placement days; HR 1.0; 95% CI, 0.7–1.4).

A single-center, nonblinded RCT involving 316 patients in the home setting was conducted to evaluate the rate of phlebitis or occlusion among patients for whom a peripheral IV catheter was routinely replaced at 72 to 96 hours and patients who underwent clinically indicated replacement.[3] Complication rates (for phlebitis or occlusion) were similar (77 vs 87 per 1,000 IV placement days; P=.71).

The 2011 CDC guideline based on expert opinion recommends routine replacement every 72 to 96 hours to prevent phlebitis and infection in adults.[4] It has been extended from 24 to 48 hours over the last 3 decades. However, the CDC made no recommendation regarding replacement of peripheral catheters in adults when clinically indicated.

Haruhiro Uematsu, MD
David Graham, MD
Sothern Illinois University Center for Family Medicine
Springfield, IL

1. Rickard C, et al. *Lancet.* 2012; 380(9847):1066–1074. **[STEP 2]**
2. Rickard CM, et al. *BMC Med.* 2010; 8:53. **[STEP 2]**
3. Van Donk P, et al. *Infect Control Hosp Epidemiol.* 2009; 30(9):915–917. **[STEP 2]**
4. O'Grady NP, et al. *Am J Infect Control.* 2011; 39(4 suppl 1):S1–S34. **[STEP 5]**

What is the best treatment for a dorsal wrist ganglion?

Evidence-Based Answer

Surgical treatment appears more effective in reducing recurrence rates than aspiration and steroid injections. Open excision and arthroscopic treatment appear to result in equal outcomes (SOR: **B**, individual RCTs). Over 6 years, there is no difference in pain or appearance, but satisfaction is higher after surgery (83%) and aspiration (81%) than after clinical reassurance (53%) (SOR: **B**, case-control trial).

A 2011 RCT compared surgical excision against ganglion aspiration plus steroid injection followed by wrist immobilization ("nonsurgical" group) in 36 patients with a ganglion cyst.[1] Surgical excision was performed in the outpatient setting using an open technique. Nonsurgical treatment included aspiration of the ganglion, followed by injection of 1 mL lidocaine

and 10 mg triamcinolone acetonide, and immobilization for 2 weeks with a short-arm volar slab. Resolution of the ganglion was evaluated after 1 year.

The surgical group had a significantly lower recurrence rate than the nonsurgical group (5.5% vs 39%; *P*=.04). This trial was limited by the small sample size and a predominance of female patients.[1]

A 2008 RCT randomized 72 patients with simple dorsal ganglia to open (n=31) or arthroscopic excision (n=41) who then had follow-up visits 5 to 7 days, 4 to 8 weeks, and 1 year postoperatively for cyst recurrence.[2] At 1 year, no difference was noted in recurrence rate; recurrences were found in 3 of 28 (11%) in the arthroscopic group compared with 2 of 23 (9%) in the open excision group (*P*=.81). Rates for postoperative pain and complications for both groups were not significantly different.

The researchers concluded an arthroscopic approach was not superior to open excision. The study was limited by a high dropout rate (29%), but overall demonstrated a low risk of recurrence a year after removal, regardless of the surgical technique.[2]

In a 2007 prospective case-control trial, 283 patients were randomized to different treatments for symptomatic dorsal ganglion cysts and then followed for 6 years.[3] Sixty received reassurance, 100 received aspiration with and without steroids, and 123 underwent either open or arthroscopic surgical excision.

After 6 years with a survey follow-up, no difference was noted among groups in pain, weakness, stiffness, or appearance. However, when comparing satisfaction rates among those who received treatment (surgery 83% and aspiration 81%) to those who were reassured (53%), the level of satisfaction was higher among those who received any kind of treatment (*P*<.0001). Within the treatment arms, fewer ganglion cysts treated with surgery recurred within 6 years compared with aspiration (39% vs 58%; *P*=.02). However, the authors concluded that no intervention demonstrated any long-term benefit for treatment of ganglion cysts.[3]

Adriana Linares, MD
Gabriel Salvadori, MD
Alyson Smith, MD
Family Medicine of Southwest Washington
Vancouver, WA

1. Khan PS, et al. *J Hand Microsurg*. 2011; 3(2):55–57. **[STEP 2]**
2. Kang L, et al. *J Hand Surg*. 2008; 33(4):471–475. **[STEP 3]**
3. Dias JJ, et al. *J Hand Surg Eur*. 2007; 32(5):502–508. **[STEP 2]**

Is amnioinfusion beneficial when umbilical cord compression is suspected during labor?

Evidence-Based Answer

Amnioinfusion has been shown to reduce variable fetal heart rate (FHR) decelerations, improve short-term neonatal outcomes, reduce maternal postpartum endometritis, and lower the incidence of caesarean section (SOR: **A**, meta-analysis of RCTs and consistent cohort trial).

A Cochrane review of 19 RCTs of more than 2,000 patients examined the effects of amnioinfusion versus no amnioinfusion (control group) for suspected umbilical cord compression.[1] Inclusion criteria were vertex singleton pregnancies without signs of infection. Overall, patients consisted of women whose neonates were considered to be at increased risk of, or had FHR patterns suggestive of, umbilical cord compression during labor (oligohydramnios, variable decelerations, meconium-stained fluid).

Amnioinfusion resulted in a lower risk of caesarean section (13 trials, N=1,493; risk ratio [RR] 0.62; 95% CI, 0.46–0.83); FHR decelerations (7 trials, N=1,006; RR 0.53; 95% CI, 0.38–0.74); Apgar scores less than 7 at 5 minutes (12 trials, N=1,804; RR 0.47; 95% CI, 0.30–0.72); meconium below the vocal cords (3 trials, N=674; RR 0.53; 95% CI, 0.31–0.92); postpartum endometritis (6 trials, N=767; RR 0.45; 95% CI, 0.25–0.81); and maternal hospital stay longer than 3 days (4 trials, N=1,051; RR 0.45, 95% CI, 0.25–0.78).[1]

A prospective RCT of 112 patients (included in the review above and discussed separately) examined patients specifically with oligohydramnios and evaluated the effects of amnioinfusion in oligohydramnios.[2] Sixty patients were randomized to amnioinfusion and 52 to the control group with only an intrauterine catheter. Patients were included in the study if they were in labor or being induced for labor with the concomitant criteria that the amniotic fluid index was less than 5 cm. The frequency of variable decelerations after amnioinfusion was significantly lower at 4 to 9 cm dilation (2% vs 42%; *P*=.003) and at 10 cm (6% vs 30%; *P*=.008). The cesarean section rate was significantly reduced by amnioinfusion compared with the control group (13% vs 29%; *P*=.043).

A controlled retrospective cohort trial (N=256) assessed intrapartum prophylactic amnioinfusion in