



Fact Sheet

Infection Control for Peritoneal Dialysis (PD) Patients

Peritoneal dialysis (PD) is a practical and widespread treatment for kidney failure. Because a soft tube (catheter) is present in the abdominal cavity for this treatment, special care must be taken by PD patients and their medical providers to prevent infection, especially following natural disasters when flooding may be present, access to medical supplies may be limited, or PD patients who may be living in temporary housing.

Exit Site Infection

Acute exit-site infection is defined as drainage with blood and/or pus from the exit site which may be associated with redness (twice the size of the catheter diameter), tenderness, overgrown granulated tissue, and swelling.

Chronic exit-site infection is characterized by granulation tissue at the external exit which is sometimes covered by a large stubborn crust or scab. Pain, redness, and swelling are frequently absent in chronic infections.

Peritonitis

Staphylococcus aureus is the most frequent germ associated with infections in PD patients and is usually caused by auto-inoculation by touch or contamination with respiratory secretions. However, following a disaster involving flooding, one might see an increase in the number of infections associated with Gram-negative waterborne bacteria.

Some of the most common symptoms of peritonitis are:

- Abdominal pain
- Abdominal tenderness
- Abdominal distention
- Cloudy PD fluid
- Fever
- Nausea and vomiting

Preventing Exit Site Infections

It is normally recommended that patients should avoid all fresh water (e.g., lakes, rivers, and streams) swimming, hot tubs, jacuzzis, soaking tubs, and public pools. Exposure to fresh water (e.g., swimming, showering, or bathing) has been associated with Gram-negative catheter-related infections and peritonitis in PD patients (1-5). To date, there are no studies that prove that wearing a dressing over a healthy, healed exit site prevents infections; however, dressings should be worn when the exit site is likely to get dirty (e.g., farmers working outside or persons hiking in a dusty environment) or wet, and dressings often help to secure the catheter (6,7). Routine use of antimicrobial solutions (e.g., ciprofloxacin ophthalmologic solution) and ointments, such as mupiricin and gentamicin, have been shown to decrease the incidence of peritonitis and catheter-related infections (8-10). While the use of antimicrobial creams,

ointments, and solutions has been reported to decrease infections, there have been limited comparisons in studies, making it difficult to recommend a specific guideline.

There are steps one can take to reduce the risk of developing exit site infections. If a PD dressing is used, it should be changed any time it becomes soiled or wet. The PD catheter exit site should also be cleaned any time the area becomes soiled.

General Exit Site Care

1. Wash hands or use an alcohol hand gel; wear clean gloves.
2. Remove dressing, if present.
3. Check exit site for redness, swelling, drainage, or soreness.
4. Check catheter for cracks or tears.
5. Gently touch the catheter tunnel, noting swelling, discharge, or pain.
6. When bathing, clean the skin around the catheter with antibacterial liquid soap and rinse.
7. Dry exit site with sterile gauze.
8. Optional: cover with antimicrobial preparation and drain sponges.
9. Secure the catheter to the abdomen using immobilizer or tape to avoid tension on the catheter.

Exit Site Care with Vinegar Solution for Wet, Red, or Sore Sites

Seek consultation and assistance with available healthcare staff or medical providers while in evacuation centers or alternate housing situations. These procedures are recommended when: 1) the exit site has been submerged; 2) water used to clean the exit site may be contaminated; or 3) the exit site is red or sore:

1. Procedure for Preparing Vinegar Solution:
 - a. Prepare vinegar solution in a very clean jar
 - b. Add 6 ounces (3/4 cup) boiled or bottled water
 - c. Add 4 ounces (1/2 cup) white vinegar
 - d. Add 1 3/4 teaspoon table salt
 - e. Shake until dissolved
 - f. Pour solution into a **clean** spray bottle
2. Procedure for Exit Site Care:
 - a. Clean your exit site
 - b. When showering, clean your exit site last using liquid antibacterial soap. Use a clean wash cloth for your exit site.
 - c. Rinse off the soap with water.
 - d. Spray your exit site with vinegar solution.
 - e. Pat dry with dry washcloth. You may use a hair dryer on "low." Be sure to hold the dryer pointing downward at least 12-15 inches from your skin. Dry under the catheter.
 - f. Secure your catheter with a small amount of slack to prevent pulling at the exit site.

If your exit site is red, sore or infected:

1. Clean your exit site twice a day with liquid antibacterial soap and rinse with water.
2. Saturate a 4x4 gauze with the vinegar solution and lay it around your catheter for 20 minutes. This solution should feel soothing. Discontinue use if solution burns your skin and seek medical attention.

Do not store the vinegar solution for more than 1 week. Discard any unused portion at the end of each week and make a fresh solution.

Other Infection Control Considerations

Waste PD fluid from HBsAg-positive patients can be disposed of into a sanitary sewer if handled with proper aseptic technique. Disposable gloves should be worn by medical personnel who handle any PD fluid, and the fluid should enter the sewer system in such a manner that no splashing occurs. Where available, the spent PD fluid can be disposed of into a sink, toilet, or other drain. The tubing from the bag should be placed below into the drain or below the surface of the water to prevent splashing while the bag drains (11). The sink, drain, and any inadvertent spills or splashes should be disinfected with 1:10 dilution household bleach or an appropriately labeled EPA-registered disinfectant (http://www.epa.gov/oppad001/list_d_hepatitisbhiv.pdf). Persons cleaning such spills should wear disposable gloves. All contaminated material including PD bags should be placed in heavy tightly sealed plastic bags for disposal.

For patients in evacuation centers, a toilet rather than a sink should be used to discard PD fluid.

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General References

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