

Why Patients Fail PD: Predictors of PD Failure

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Outline

- Mechanical/catheter complications
- Infectious complications
- Inadequate dialysis/ultrafiltration failure
- Psychosocial complications (burnout)

Reasons for Dropout from PD

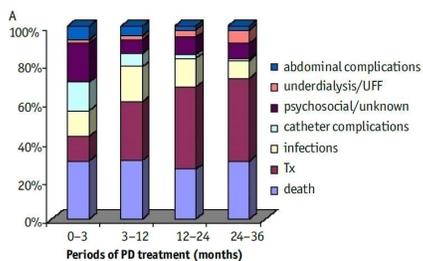


Figure 2. Reasons (A) for dropout from peritoneal dialysis during four periods of follow-up.
Kolesnyk I et al. 2010 PDI 30(2): 170-7.

Mechanical Complications

- Poor exit-site location
 - Should be visible
 - Avoid skin folds to decrease infection
 - Avoid beltline
 - Consideration for aesthetics



Pictures Courtesy Dr. John Crabtree - Kaiser Bellflower

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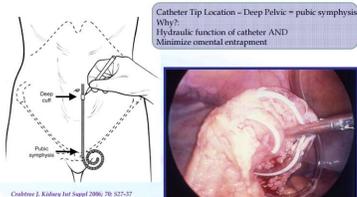
Should be visible for a patient to perform daily



Pictures Courtesy Dr. John Crabtree - Kaiser Bellflower

Mechanical Complications

- Catheter tip migration
- Omental entrapment



Crabtree J. Kidney Int Suppl 2006; 76: S27-S27

Mechanical Complications

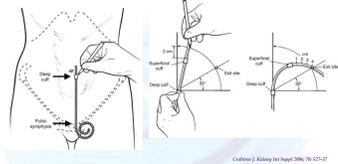
- Pericatheter leaks, hernias



Courtesy of Joanne Bargman, MD FRCP

Preventing Catheter Complications

- Pre-operative marking
- wait 10-14 days before starting PD
 - or do recumbent low volume PD
- Choose the best operator



Chalton J. Kidney Int Suppl 2006; 76: S107-17

Infectious Complications

- PD-related
 - Exit-site infections
 - Tunnel infections
 - Peritonitis
- Consequences
 - 20% of technique failures
 - 2-6% of deaths
 - Peritoneal membrane failure
 - Decreased residual kidney function



Infectious Complications

TABLE 3. Pathways for peritonitis to develop in peritoneal dialysis, and commonly associated organisms

Pathway	Common organisms
Poor technique with connection	Skin and air borne organisms
Cap falling off	Environmental organisms
Exit site and tunnel infection	Many but <i>Staphylococcus aureus</i> and <i>Pseudomonas aeruginosa</i> problematic
Transmural migration across bowel wall	Enteric organisms
Intra-abdominal pathology	Streptococcus and other oral organisms
Dental work	Upper similar to dental work, lower enteric
Endoscopy	Vaginal vault organisms
Hysteroscopy	Perineal organisms including <i>Escherichia coli</i>
Child birth	

Pitiano B. 2017 Semin Dial 30(2): 158-163.

Preventing Infections

- Training
 - Multi-disciplinary
 - Multi-modal
 - Home visit assessment
 - Focus on hand hygiene

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Adapted from Schreiber MJ. 2017 Semin Dial 30(2): 149-157.

Preventing Infections

- Training
 - Multi-disciplinary
 - Multi-modal
 - Home visit assessment
 - Focus on hand hygiene
 - Glo-Germ gel
- Re-training after:
 - *Peritonitis
 - >5 days hospitalization
 - ≥14 days off PD
 - Annually for all patients



Lather
R*inse*
R*epeat*

Adapted from Schreiber MJ. 2017 Semin Dial 30(2): 149-157.

Preventing Infections

- Exit-site cream
 - Gentamicin or mupirocin
- Consider intra-nasal treatment *Staph aureus* carriers
- Prophylactic antibiotics
 - Colonoscopy
 - Invasive gynecologic procedures
 - Major dental procedures
 - Touch contamination
- Prophylactic antifungals with antibiotics



Adapted from Schreiber MJ. 2017 Semin Dial 30(2): 149-157.

Treating Infections

- Follow ISPD guidelines
 - Empiric antibiotics for Gram + and Gram neg
 - Tailor to local sensitivities
 - Refine after culture results
 - Treat for 2-3 weeks
- Timely catheter removal
 - Fungal peritonitis
 - Refractory peritonitis
- Monitor rates
 - episodes per year at risk
 - Organism-specific rates



Adapted from Schreiber MJ. 2017 Semin Dial 30(2): 149-157.

Inadequate Dialysis & UF Failure

- Peritoneal membrane changes
 - Neovascularization, interstitial fibrosis →
 - Increased small solute transport, impaired UF
- Exacerbated by
 - Peritonitis
 - Exposure to glucose
 - Loss of residual kidney function

Preventing Inadequate Dialysis

- Preserving the peritoneal membrane
 - Decrease exposure to hypertonic solutions
 - Consider icodextrin for long dwell
 - Prevent peritonitis
- Preserving residual kidney function
 - ACEI/ARB if tolerated
 - Avoid nephrotoxins
 - Avoid hypotension, hypovolemia
 - (Diuretics)



Psychosocial Complications

- Insufficient support
 - *"The illness is a burden for my wife. She takes care of everything. This gives me a sense of guilt."*
- Depression, negative feelings
 - *"I was very down because I feel kind of too young to feel . . . to be useless in society and even to my family."*
 - *You feel like there's something wrong with you. But when you actually have it hanging out of you, now you know there is something wrong with you."*
- Burnout
 - *"The drudgery of having to do dialysis day-in and day-out"*
 - *"too many supplies and too much equipment."*

Quotes from Tong A. 2013 AJKD 61(6): 873-888.

Preventing Psychosocial Complications

- Assisted PD
 - Elderly
 - Respite care
- Screen for depression
- Peer support
- Counseling services
- Financial Support



Conclusion

- Patients fail PD for many reasons
 - Mechanical complications
 - Infectious complications
 - Inadequate dialysis
 - Psychosocial complications
- Solutions
 - Choose an experienced operator to insert the catheter
 - Train, train, and retrain patients
 - Prophylactic antibiotic use
 - ACEI/ARB
 - Screen for depression/burnout & provide support

Thank you!

