Letterkenny University Hospital - LUH Antimicrobial Prescribing Policy/Guidelines: Peritoneal Dialysis

Exit site infection

Initial Empiric therapy for suspected Exit-site Infection

- Check previous microbiology history i.e. history of colonisation, infection and previous sensitivities.
- **Prescribe anti-fungal prophylaxis while on antibiotics** (see section on Prophylaxis).
- Consider PD catheter removal in patients with exit site or tunnel infection that progresses to, or occurs simultaneously with, peritonitis due to the same organism.

Empiric Antibiotics for suspected Exit-site Infection

	1st Line Antibiotics	Penicillin allergy: delayed onset non-severe reaction See penicillin hypersensitivity section for further information	Penicillin allergy: immediate or severe delayed reaction	Comment
No previous microbiology history of note	Flucloxacillin PO 500mg (mild) – 1g (moderate to severe) every 6 hours	CefALEXin PO 500mg every 12 hours	Clindamycin PO 300mg every 6 hours	**Duration:** 7 to 10 days for most * infections if resolution of infection is confirmed by clinical evaluation at around 1 week. This may be extended to 2 weeks if the infection is slow to resolve following clinical review. ***Note:** at least 3 weeks for pseudomonas infections. In addition, when there is unsatisfactory treatment response, a second antipseudomonal drug should be added. Please discuss with Microbiologist.
Previous history of infection or colonisation with MRSA	Doxycycline PO 100mg every 12 hours			
Previous history of infection or colonisation with (ciprofloxacin sensitive) Pseudomonas	**Add** Ciprofloxacin PO 500mg every 12 hours (i.e. in **addition** to empiric cover above while awaiting sensitivities)			

Follow culture and sensitivity and modify antibiotic choice based on results

When an exit site infection does not resolve with effective antibiotics, consider simultaneous removal and reinsertion of PD catheters with a new exit site, under appropriate antibiotic coverage.

Tunnel infection

Initial Empiric therapy for suspected Tunnel Infection

- Check microbiology history i.e. history of colonisation, infection and previous sensitivities
- **Prescribe anti-fungal prophylaxis while on antibiotics** (see section on Prophylaxis)
- Consider PD catheter removal in patients with exit site or tunnel infection that progresses to, or occurs simultaneously with, peritonitis due to the same organism.

Empiric Antibiotics for suspected tunnel infection

	1st Line Antibiotics	Penicillin allergy: delayed onset non-severe reaction See penicillin hypersensitivity section for further information	Penicillin allergy: immediate or severe delayed reaction	Comment
No previous microbiology history of note	Flucloxacillin PO 1g every 6 hours	CefALEXin PO 500mg every 12 hours	Clindamycin PO 450mg every 6 hours	**Duration:** 3 weeks **Note** : at least 3 weeks for pseudomonas (i.e. may require longer treatment). In addition, when there is unsatisfactory treatment response, a second antipseudomonal drug should be added. Please discuss with consultant microbiologist.
Previous history of infection or colonisation with MRSA	Vancomycin **IP** (intraperitoneal)* Loading dose = 30mg/kg (Max 3g) **IP** (intraperitoneal) stat. Check level every 3 days and re-dose as appropriate; target trough level: 15-20mg/L Maintenance dose = 15mg/kg (or adjusted if required) (Max 2g) *If Vancomycin cannot be administered by the IP (intra-peritoneal) route, or if there will be a significant delay, then it should be administered by the IV route. Give a loading dose: 25mg/kg (rounded to the nearest 250mg, Max 2g) IV dose and adjust as per renal team advice; switch to the intra-peritoneal route as soon as possible. Allergy to Vancomycin : Discuss with Microbiologist.			
Previous history of infection or colonisation with (ciprofloxacin sensitive) Pseudomonas	**Add** Ciprofloxacin PO 500mg every 12 hours (i.e. in **addition** to empiric cover above while awaiting sensitivities)			

Follow culture and sensitivity and modify antibiotic choice based on results

When a tunnel infection does not resolve with effective antibiotics, consider simultaneous removal and reinsertion of PD catheters with a new exit site, under appropriate antibiotic coverage.

Peritonitis

Initial Empiric Therapy for suspected Peritonitis

- Check microbiology history i.e. history of colonisation, infection and previous sensitivities
- **Prescribe anti-fungal prophylaxis while on antibiotics** (see section on Prophylaxis)
- Consider PD catheter removal in patients with exit site or tunnel infection that progresses to, or occurs simultaneously with, peritonitis due to the same organism.

Empiric Antibiotics for suspected Peritonitis

Empiric Antibiotics for suspected Peritonitis		
	1st Line Antibiotics	**Comment**
	Vancomycin **IP** (intraperitoneal)* Loading dose = 30mg/kg (Max 3g) IP* Check level every 3 days and re-dose as appropriate; target trough level: 15-20mg/L Maintenance dose = 15mg/kg (or adjusted if required) (Max 2g) **AND** Ciprofloxacin PO 500mg every 12 hours **or** IV 400mg every 12 hours *If the patient is systemically unwell and showing signs of sepsis please* **ADD** Gentamicin **IP** (intraperitoneal)* 0.6mg/kg once daily IP* Check trough level daily and re-dose when necessary; target < 2mg/L Consider discussion with microbiology if concerned.	

*If antibiotics cannot be administered by the IP (intra-peritoneal) route, or if there will be a significant delay, then they should be administered by the IV route; switch to the IP (intraperitoneal) route as soon as possible.

Vancomycin: Give a loading dose: IV 25mg/kg (rounded to the nearest 250mg, Max 2g) and adjust as per renal team advice.

Gentamicin: Give IV 2mg/kg. If the patient is obese (i.e. actual body weight exceeds Ideal Body Weight by ≥20%), please use the Adjusted Dosing Weight .

Check trough level daily, re-dose when necessary; target < 2mg/L.

Follow culture and sensitivity and modify antibiotic choice based on results

Culture negative Peritonitis

If the dialysis effluent culture is negative and patient is improving clinically stop gram negative agent i.e. ciprofloxacin and continue the gram-positive treatment for a total of 14 days.

If the dialysis effluent culture is negative and patient is not improving, consider other causative organisms - contact microbiologist for advice.

Directed Treatment of Infection due to Gram-positive organisms

Directed treatment of infection due to Gram-negative organisms

Directed Treatment of Infection due to Gram-negative organisms			
	1st Line Antibiotics	**Penicillin allergy** See penicillin hypersensitivity section for further information	**Comment**
Single organism **e.g. E Coli, Klebsiella** ***Check sensitivity***	Please review with sensitivity results and change to an appropriate antibiotic. If patient is clinically unwell, please discuss with microbiologist and considering: Adding Gentamicin **IP** 0.6mg/kg once daily (Check trough level daily, re-dose when necessary; target < 2mg/L)		**Duration:** 21 days
Pseudomonas ***Check sensitivity***	Piperacillin/Tazobactam IV 4.5g every 12 hours **and** Gentamicin **IP** 0.6mg/kg once daily (Check trough level daily; target < 2mg/L) Stop Vancomycin and Ciprofloxacin	Continue Ciprofloxacin **Add** Gentamicin **IP** 0.6mg/kg once daily (Check trough level daily; target < 2mg/L) Stop Vancomycin	**Duration:** 21 days **Consider catheter removal**

Directed Treatment of Infection due to multiple organisms

Directed Treatment of Infection due to multiple organisms			
	1st Line Antibiotics	**Penicillin allergy** See penicillin hypersensitivity section for further information	**Comment**
Multiple bacteria isolated ***Immediate surgical assessment is mandatory***	Piperacillin/Tazobactam IV 4.5g every 12 hours **and** Gentamicin **IP** 0.6mg/kg once daily (Check trough level daily, re-dose when necessary; target < 2mg/L) Stop Vancomycin and Ciprofloxacin	Discuss with microbiology to determine cover required.	**Duration:** 21 days

Directed treatment of infection due to Fungal organisms

Directed Treatment of Infection due to Fungal organisms		
Immediate catheter removal is recommended **Consult with Microbiologist**		
Candida albicans ***Check sensitivity***	Fluconazole PO 200mg once daily Stop Vancomycin and Ciprofloxacin	**Duration:** 14 days after catheter removal
Candida non-albicans ***Check sensitivity***	Caspofungin IV Loading dose: 70mg on Day 1 Maintenance dose: from Day 2 Weight ≤ 80kg: 50mg once daily Weight > 80kg: 70mg once daily Stop Vancomycin and Ciprofloxacin	**Duration:** 14 days after catheter removal
Other fungal organisms	Contact Microbiologist	

Anti-microbial prophylaxis for peritoneal dialysis patients