

**Hospital: Confluence Health**

**Presenter: Khoa Nguyen**

Question/case summary:

1. The AASLD guidelines recommend CTX for 7 days for SBP PPX in cirrhotics with a GI bleed, but when I looked at the sources, they seem to only be talking about variceal bleeds. So if they scoped a patient and found GI bleeding from a non-varices, is CTX ppx still indicated?
2. The guidelines recommend PO norfloxacin for SPB ppx as a step down, but since that's not available, they say you can also use cipro PO. Levofloxacin isn't listed as an option for SBP ppx. The theory seems to be that you want an abx that has the lowest bioavailability so it stays in the gut. Norfloxacin has about a 40% bioavailability, cipro moves up to about 75%, so with levofloxacin at nearly 99% bioavailability, it doesn't seem like the best option, but can levofloxacin still be considered if they wanted an levofloxacin based H pylori tx and SBP ppx?

UW TASP Recommendations:

1.) Antibiotic prophylaxis in patients with cirrhosis and upper gastrointestinal bleeding has been shown to significantly reduce the risk of bacterial infections. A meta-analysis by Chavez-Tapia and colleagues compared multiple trials, the majority with variceal bleeding, and found antibiotic prophylaxis compared to placebo was associated with a number of improved outcomes, including and importantly decreased overall mortality. In the setting of non-variceal bleeding, there is some data reporting differences in mortality when administering antibiotic prophylaxis in cirrhotic patients with peptic ulcer disease. While antibiotic prophylaxis was not shown to be statistically significant, the trend towards decreased mortality is suggestive of potential benefit.

Our recommendations for antibiotic prophylaxis in patients with cirrhosis and GI bleeding are as follows:

* In the setting of upper GI bleeding in cirrhotic patients, both variceal and non-variceal bleeds, treating with antibiotics is recommended.
* In the setting of lower GI bleeding in cirrhotic patients, antibiotic prophylaxis is not warranted and is most commonly caused by portal hypertensive colopathy and hemorrhoids with surgical interventions being preferred therapy.

2.) Historically, oral administration of non-absorbable antibiotics had become the standard of care for preventing bacterial infections in cirrhotic patients with GI bleeding after the pioneer study published by Rimola and colleagues in 1985. While the AASLD guidelines do exclude levofloxacin as a therapeutic option for SBP treatment and prophylaxis, levofloxacin is considered a newer fluoroquinolone agent that was not available to be studied in clinical trials during the 1980’s and early 1990’s, and therefore is not part of the AASLD guidelines. Given levofloxacin’s bacterial spectrum, favorable pharmacokinetics, and convenience of daily dosing, it can be an option for both SBP prophylaxis and treatment. Though levofloxacin does have much higher bioavailability compared to norfloxacin and ciprofloxacin, trimethoprim/sulfamethoxazole also has high bioavailability and is recommended as an option for SBP prophylaxis suggesting other beneficial mechanisms other than the absorption component of antibiotics.

Our recommendations for levofloxacin use in patients with SBP are as follows:

* Uncomplicated SBP treatment: ciprofloxacin 500mg PO BID or levofloxacin 500mg PO daily
* SBP prophylaxis: ciprofloxacin 500mg PO BID, trimethoprim/sulfamethoxazole 1 double strength PO daily, or levofloxacin 250mg PO daily

Long term use of the effects of chronic antibiotic therapy for SBP prophylaxis has not been studies and some concerns have been raised regarding emergence of resistance. Risks and benefits of this practice remain yet to be fully elucidated.

References:

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2. Yang SC, Chen KC, Tai WC et al. The influential roles of antibiotics prophylaxis in cirrhotic patients with peptic ulcer bleeding after initial endoscopic treatments. PLoS One. 2014; 9(5): e96394.
3. Liou IW, Kim HN. Recognition and Management of Spontaneous Bacterial Peritonitis. Hepatitis C Online. Updated April 12, 2018.   
   <https://www.hepatitisc.uw.edu/go/management-cirrhosis-related-complications/spontaneous-bacterial-peritonitis-recognition-management/core-concept/all> Accessed August 20, 2019.
4. Rimola A, Bory F, Teres J, et al. Oral, non-absorbable antibiotics prevent infection in cirrhotics with gastrointestinal hemorrhage. Hepatology. 1985; 5(3):463-467.
5. Bernard B et al. Antibiotic prophylaxis for the prevention of bacterial infections in cirrhotic patients with gastrointestinal bleeding: a meta-analysis. Hepatology 1999;29(6):1655-61.

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