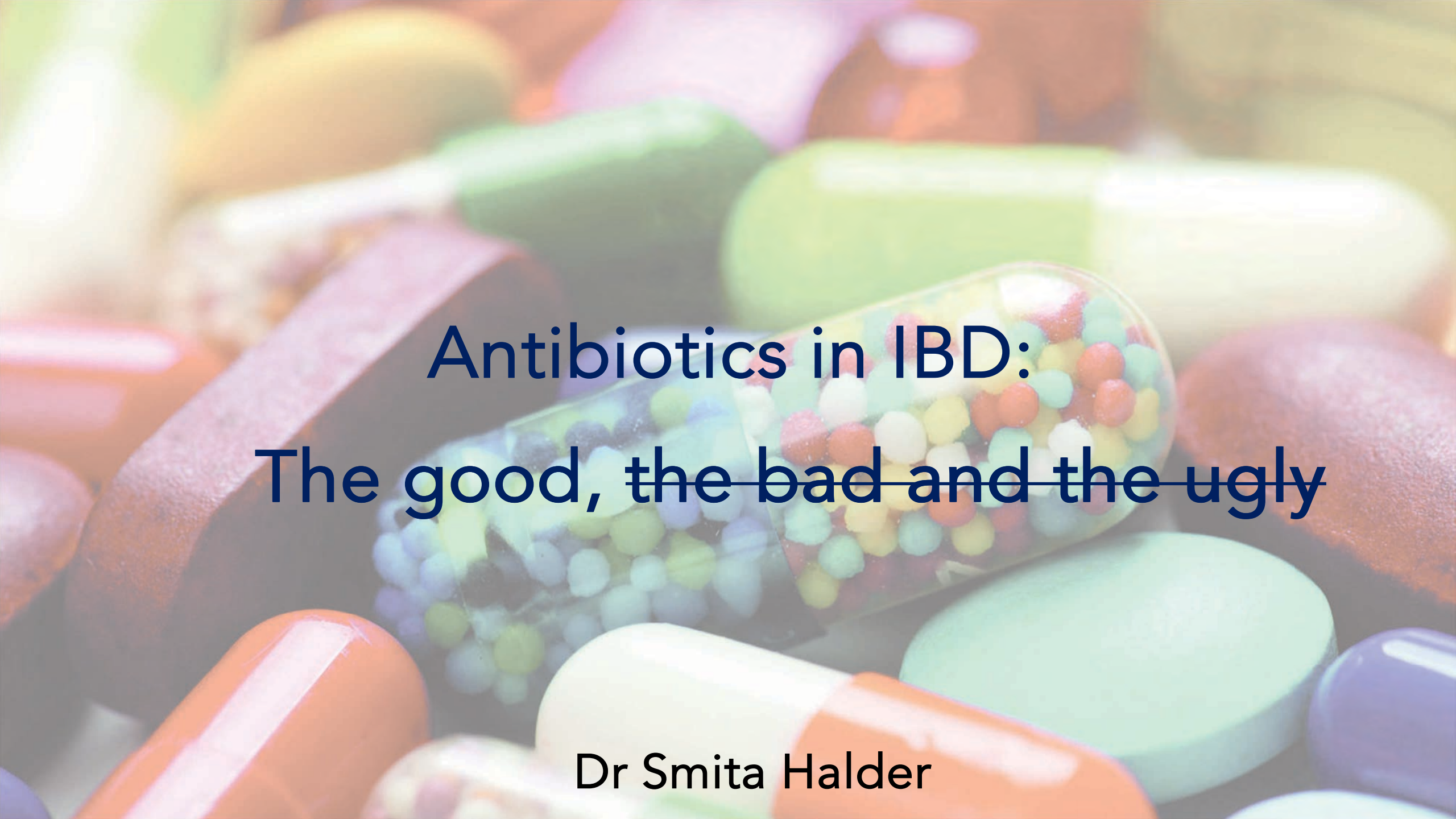


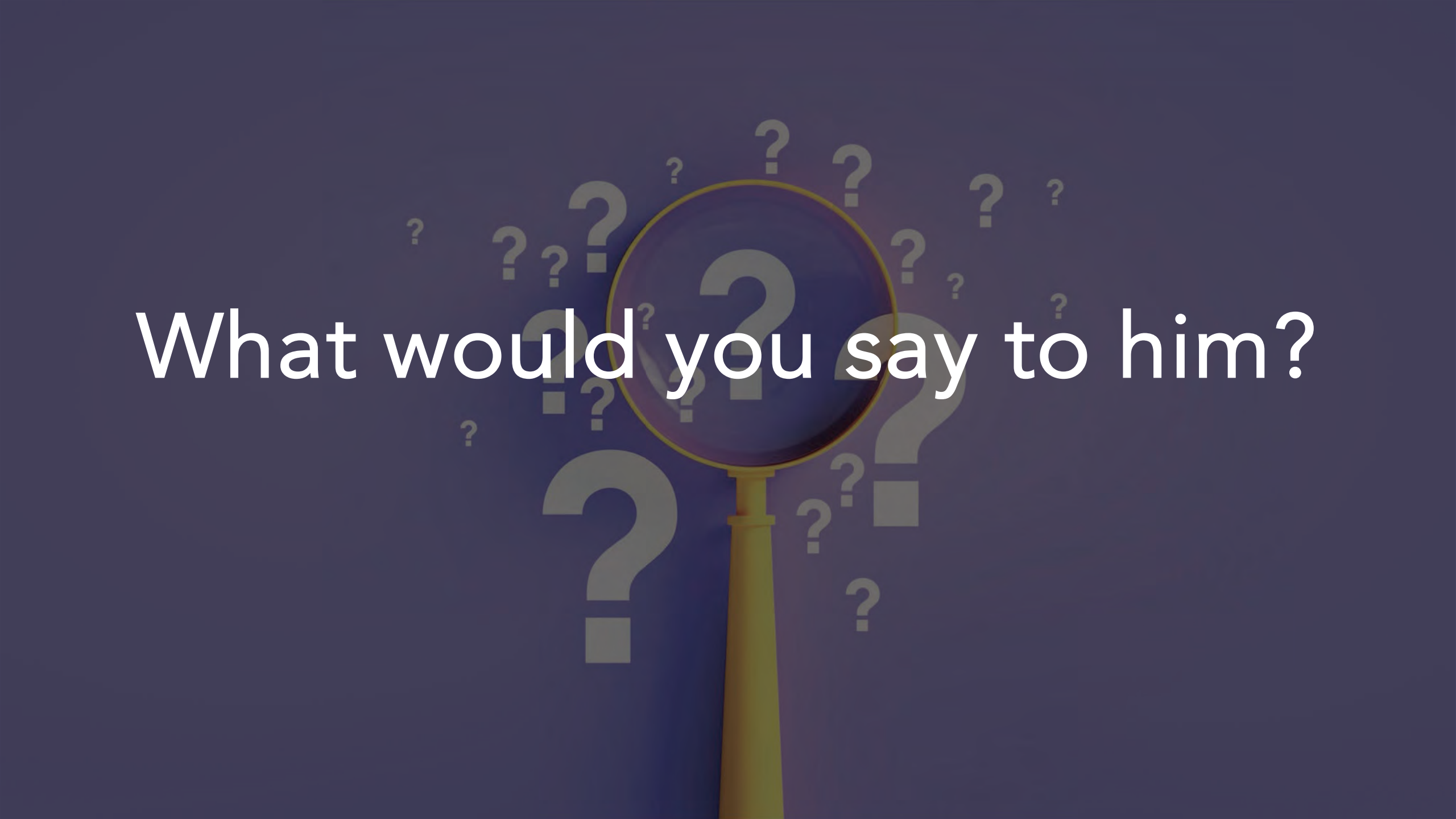
Antibiotics in IBD:

The good, ~~the bad and the ugly~~

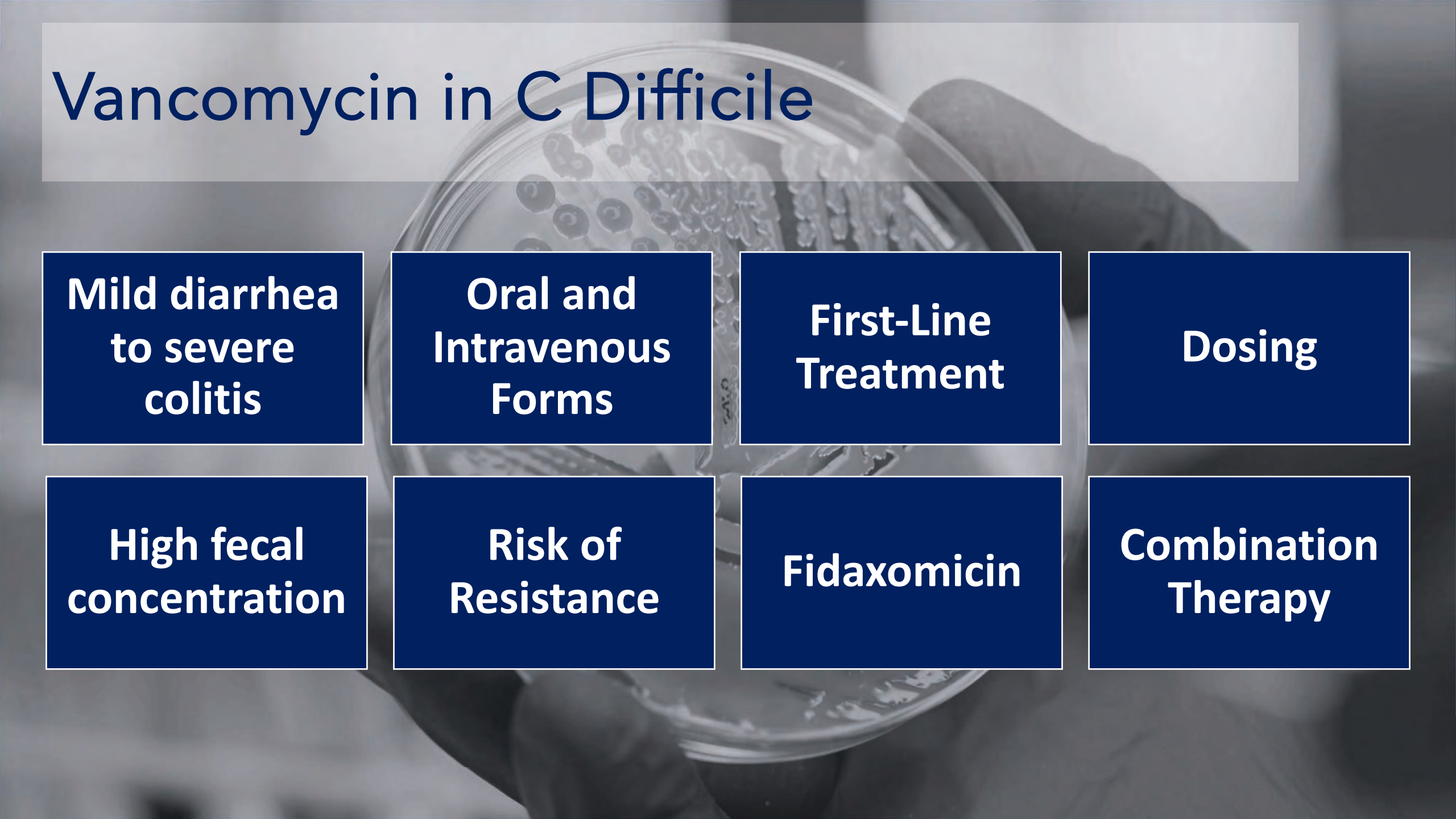
Dr Smita Halder

Case 2: 39M patient

- UC dx 2013, PSC dx in 2015.
- Recurrent flares of his UC and PSC over past few years
- Compliant with 5 ASAs for UC and ursodeoxycholic acid for PSC
- 4 week history of jaundice and RUQ pain
- Researching potential Rx for PSC : read about the use of vancomycin
- He remembers being on this for C difficile earlier in the year
- Asks if the infection has led to his liver issues??


What would you say to him?

Vancomycin in C Difficile



Mild diarrhea to severe colitis	Oral and Intravenous Forms	First-Line Treatment	Dosing
High fecal concentration	Risk of Resistance	Fidaxomicin	Combination Therapy

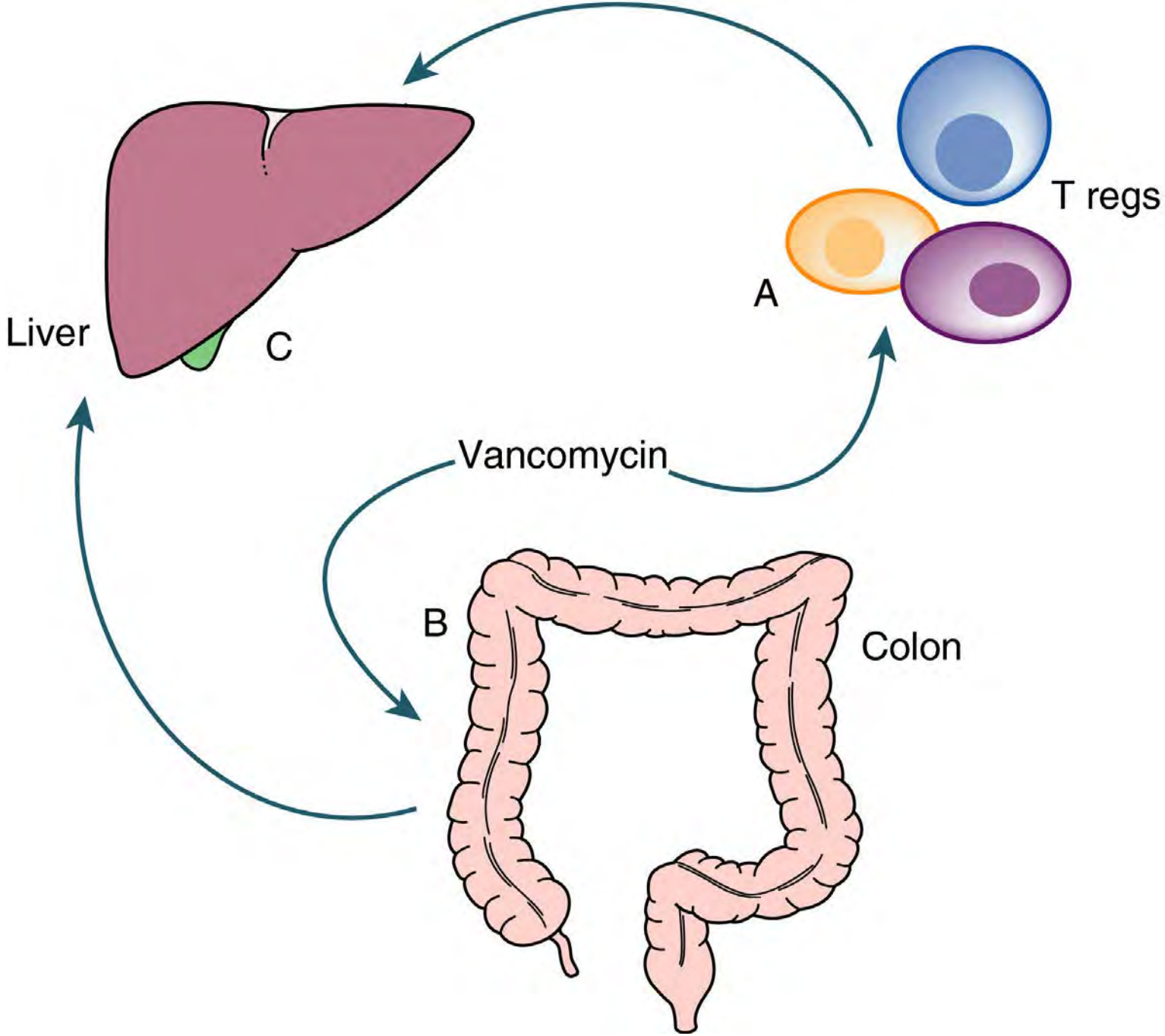
Vancomycin in PSC

Hypothesis

Gut microbiome and bacterial translocation from the gut leads to PSC

Mechanism of action

Vancomycin *may* influence the composition of the gut microbiota and reduce the inflammation associated with PSC

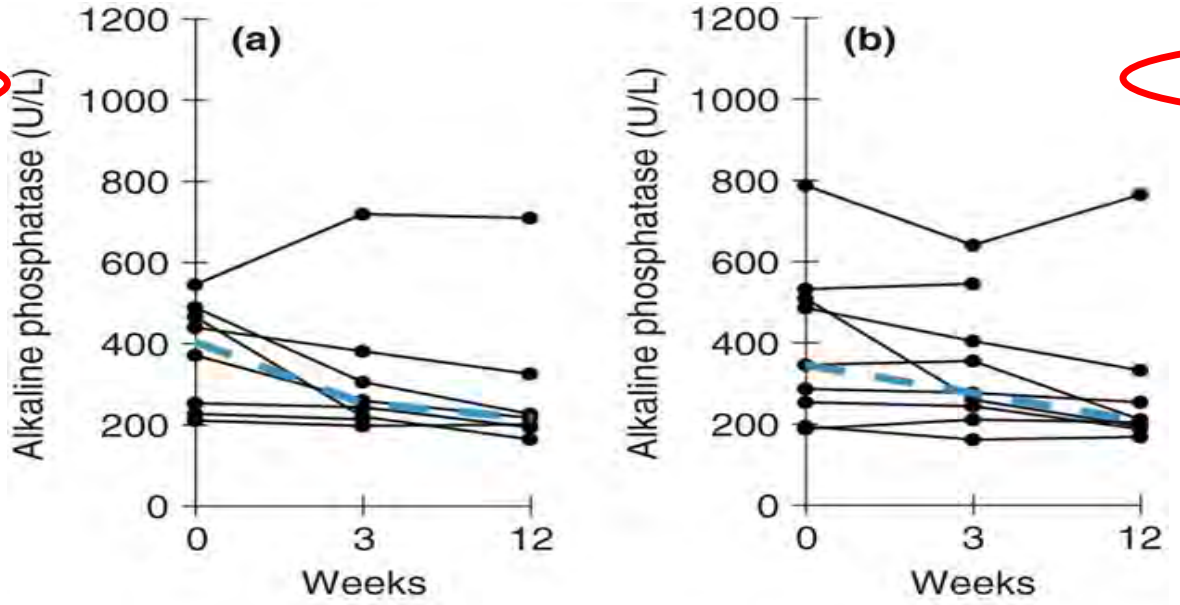


Damman Aliment Pharmacol Ther Feb 2018; 47(7):886-895

Mayo Clinic RCT: vancomycin or metronidazole in patients with PSC- a pilot study

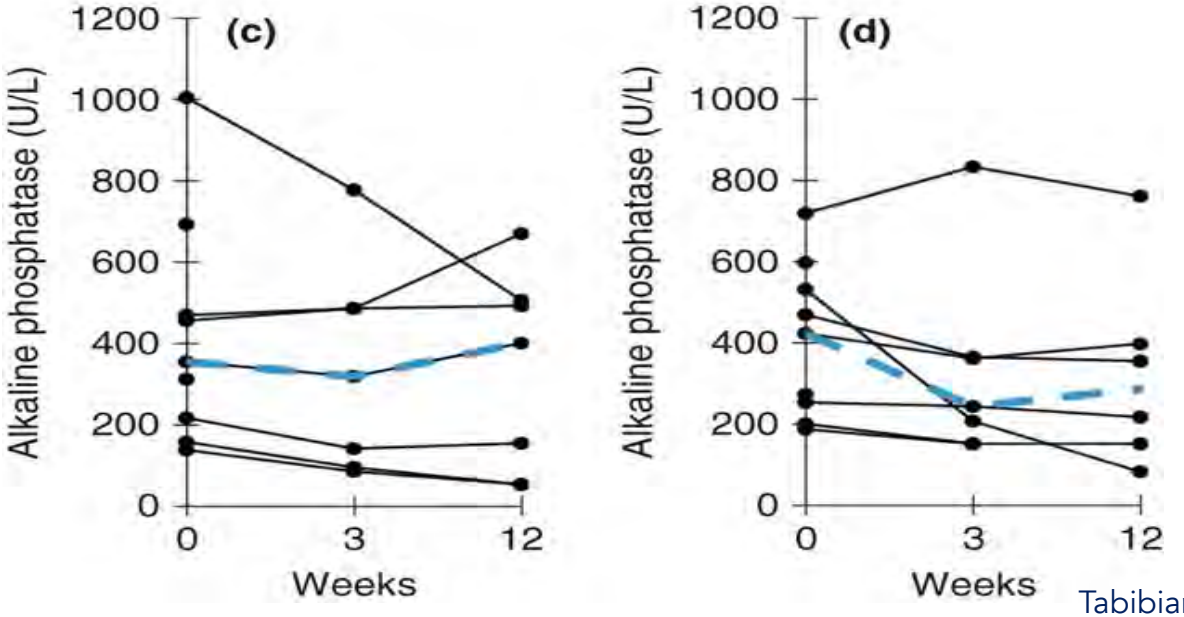
Low dose Vanc

High dose Vanc



Low dose Metro

High dose Metro



Tabibian et al. Aliment Pharm Ther 2013;37(6):604-612

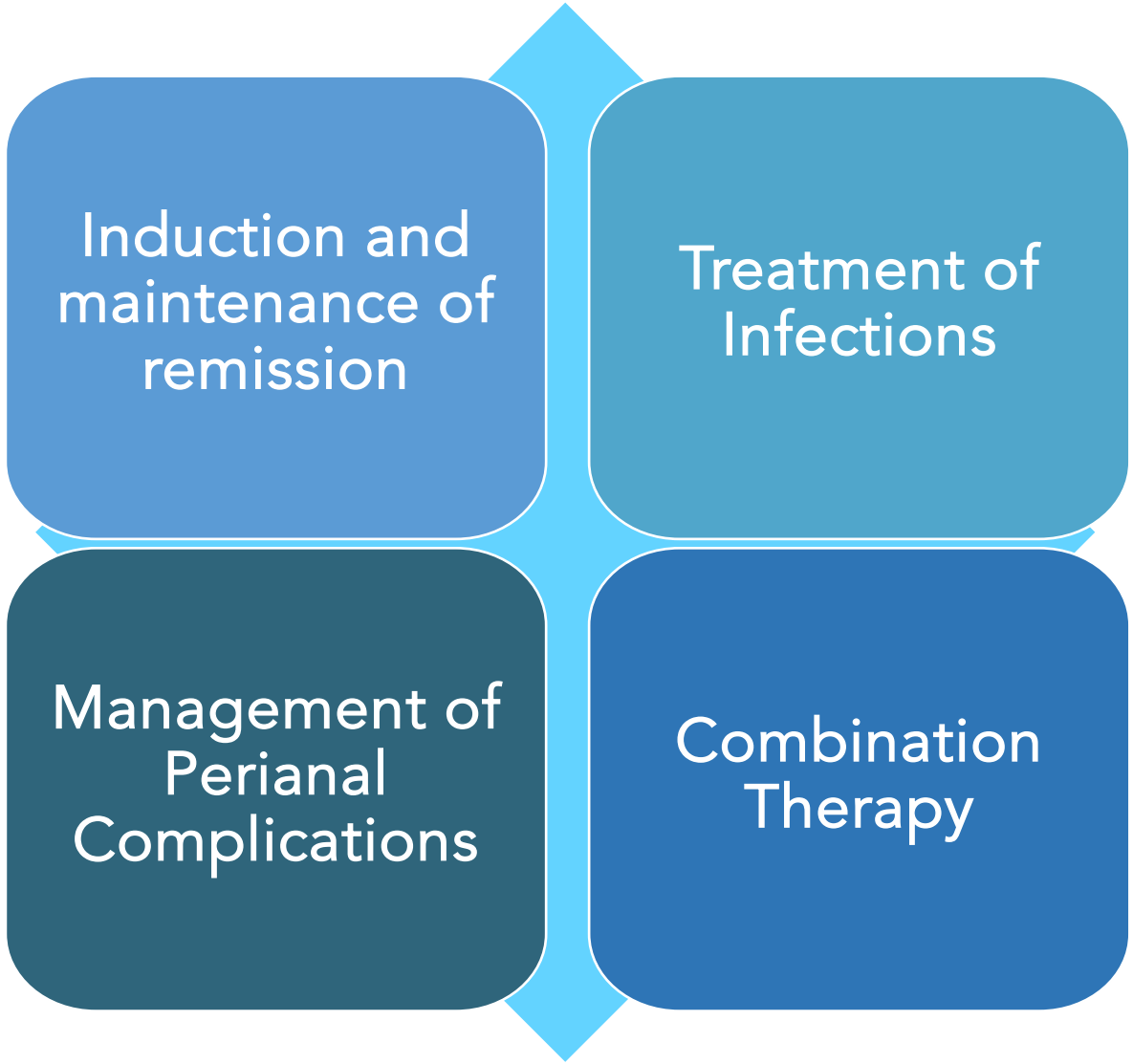
Vancomycin in IBD

- Role of gut bacteria and dysbiosis in the pathogenesis of IBD.
- Case report

Rahman et al.Clin J Gastroenterol 2021 Feb;14(1):159-164.

- 51 M pt with UC/ PSC and post transplant.
- Intractable UC symptoms despite Vedo, switched to Remicade and steroids
- Vancomycin 125mg bid eventually led to remission

Crohn's and Antibiotics



RCTs

Use of antibiotics in patients with Crohn's disease: a systematic review and meta-analysis

- 15 RCTs
- Pooled effect of RR 1.33, 95% CI (1.17-1.51, p<0.00001)

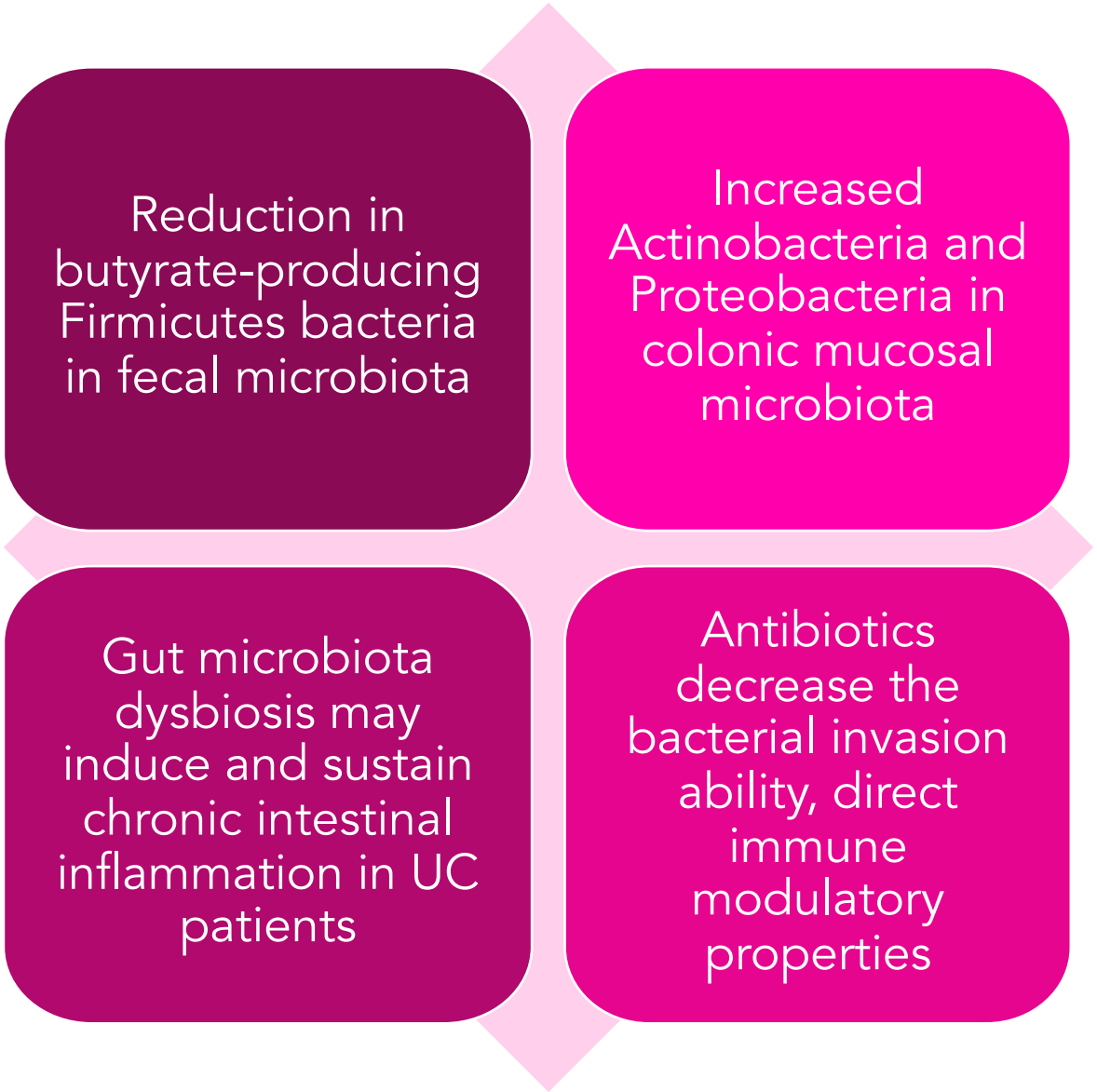
Jie Wen Su. J Dig Dis 2015;16(2):58-66

Antibiotics for induction and maintenance of remission in Crohn's disease

- 13 RCTs
- Failure to achieve remission RR 0.86, 95% CI (0.76-0.98)

Townsend et al. Cochrane Database Syst Rev. 2019(2): CD012730

UC and Antibiotics



Meta-Analysis of 12 RCTs: UC & Abx

01 Methods:

Compared antibiotic therapy with placebo or no intervention

02 Antibiotics:

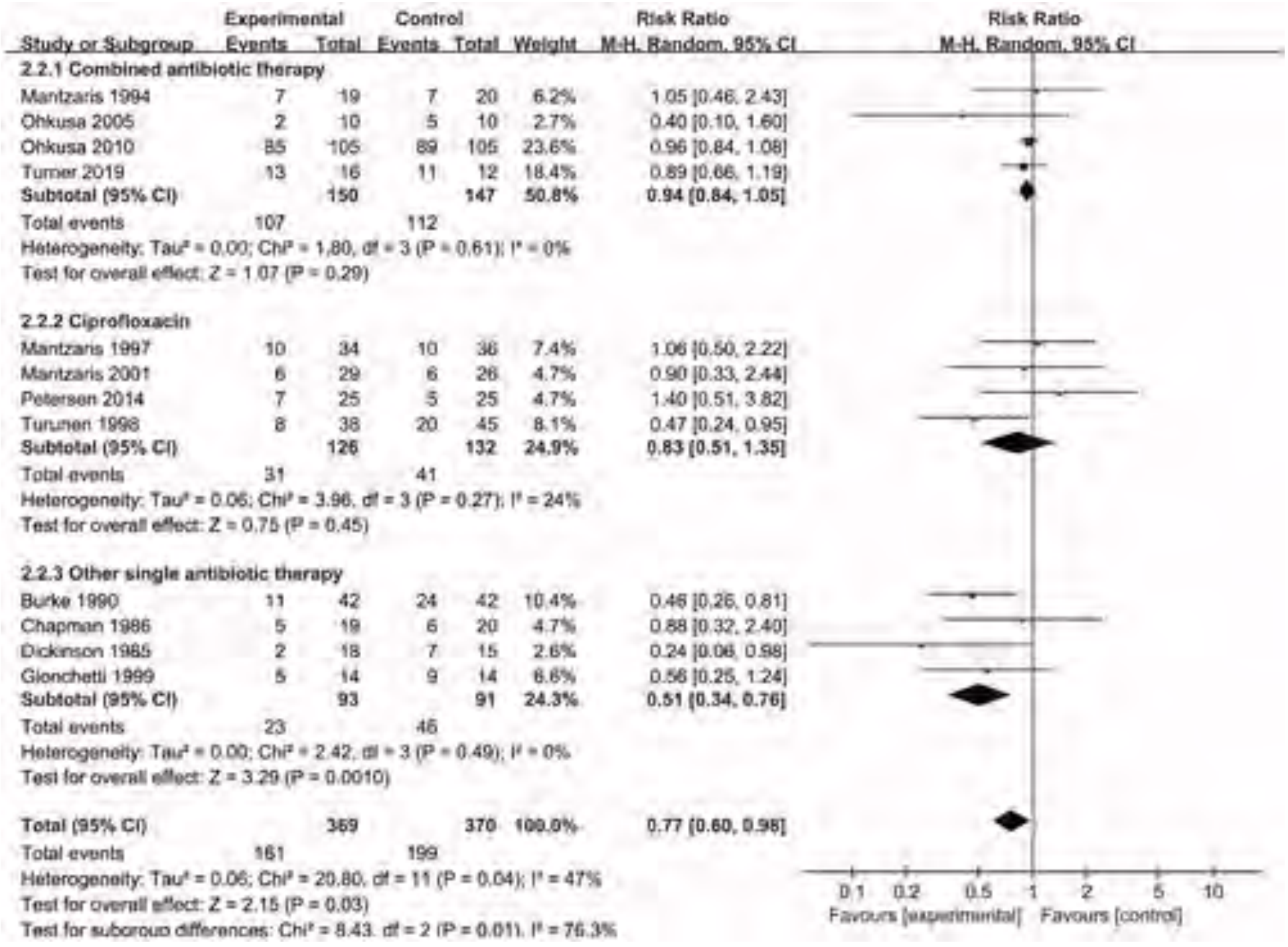
Ciprofloxacin

Amoxicillin
Tetracycline
Flagyl
Tobramycin
Vancomycin
Rifaximin

03 Outcome:

Proportion of patients who failed to achieve remission RR 0.77; 95% CI (0.60-0.98), p 0.03

Scandinavian Journal of Gastroenterology, 56:2, 162-170


Experimental
Control
Risk Ratio
Risk Ratio
Study or Subgroup Events Total Events Total Weight M-H, Random, 95% CI
M-H, Random, 95% CI
2.2.1 Combined antibiotic therapy
Mantzaris 1994 7 19 7 20 6.2% 1.05 [0.46, 2.43]
Ohkusa 2005 2 10 5 10 2.7% 0.40 [0.10, 1.60]
Ohkusa 2010 85 105 89 105 23.6% 0.96 [0.84, 1.08]
Turner 2019 13 16 11 12 18.4% 0.89 [0.66, 1.19]
Subtotal (95% CI) 150 147 50.8% 0.94 [0.84, 1.05]
Total events 107 112
Heterogeneity: Tau² = 0.00; Chi² = 1.80, df = 3 (P = 0.61); I² = 0%
Test for overall effect: Z = 1.07 (P = 0.29)
2.2.2 Ciprofloxacin
Mantzaris 1997 10 34 10 36 7.4% 1.06 [0.50, 2.22]
Mantzaris 2001 6 29 6 26 4.7% 0.90 [0.33, 2.44]
Petersen 2014 7 25 5 25 4.7% 1.40 [0.51, 3.82]
Turunen 1998 8 38 20 45 8.1% 0.47 [0.24, 0.95]
Subtotal (95% CI) 126 132 24.9% 0.83 [0.51, 1.35]
Total events 31 41
Heterogeneity: Tau² = 0.06; Chi² = 3.96, df = 3 (P = 0.27); I² = 24%
Test for overall effect: Z = 0.75 (P = 0.45)
2.2.3 Other single antibiotic therapy
Burke 1990 11 42 24 42 10.4% 0.46 [0.26, 0.81]
Chapman 1986 5 19 6 20 4.7% 0.88 [0.32, 2.40]
Dickinson 1985 2 18 7 15 2.6% 0.24 [0.06, 0.98]
Gionchetti 1999 5 14 9 14 6.6% 0.56 [0.25, 1.24]
Subtotal (95% CI) 93 91 24.3% 0.51 [0.34, 0.76]
Total events 23 46
Heterogeneity: Tau² = 0.00; Chi² = 2.42, df = 3 (P = 0.49); I² = 0%
Test for overall effect: Z = 3.29 (P = 0.0010)
Total (95% CI) 369 370 100.0% 0.77 [0.60, 0.98]
Total events 161 199
Heterogeneity: Tau² = 0.06; Chi² = 20.80, df = 11 (P = 0.04); I² = 47%
Test for overall effect: Z = 2.15 (P = 0.03)
Test for subgroup differences: Chi² = 8.43, df = 2 (P = 0.01), I² = 76.3%
0.1 0.2 0.5 1 2 5 10
Favours [experimental] Favours [control]

Role of Antibiotics in UC

- Not typically considered first-line Rx
- May be considered in specific situations, eg. infections or complications
  - Pouchitis
- Metronidazole and ciprofloxacin are commonest ones