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Pulmonary, Gastrointestinal and Hepatology problems in PID

Royal Free London 
NHS Foundation Trust



Centre for
Immunodeficiency

iit

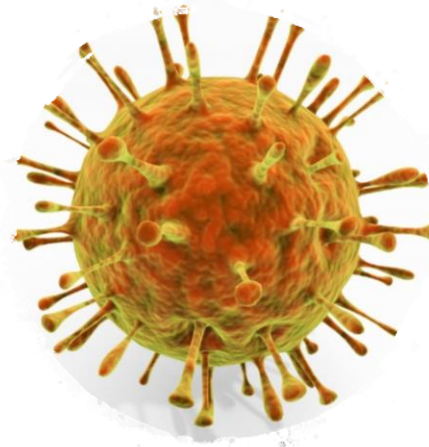
Faculty Disclosure

	No, nothing to disclose
x	Yes, please specify:

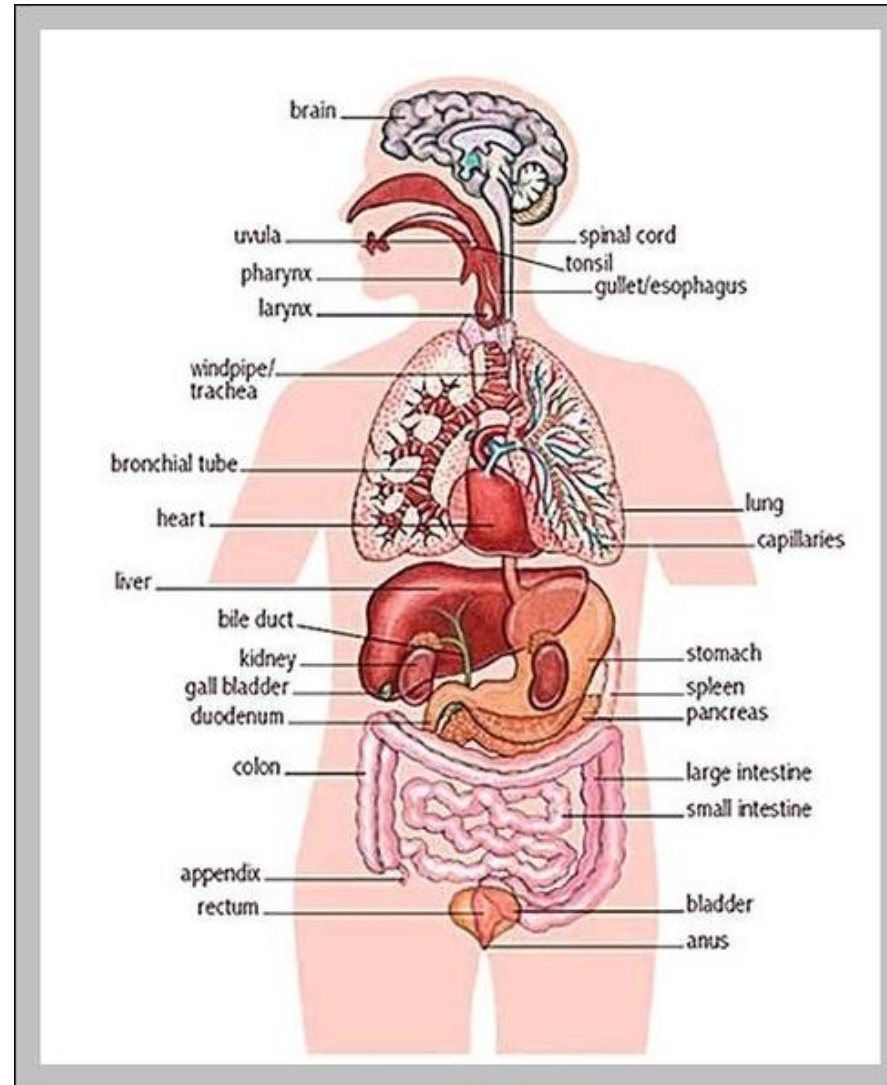
Company Name	Honoraria/ Expenses	Consulting/ Advisory Board	Funded Research	Royalties/ Patent	Stock Options	Ownership / Equity Position	Employee	Other (please specify)
CSL Behring	x		x					
UCL Biomedical Research Centre			x					
Rare Diseases Foundation			x					
British Society for Antimicrobial Chemotherapy			x					

What you will hear
over at ESID

LOTS OF SCIENCE!

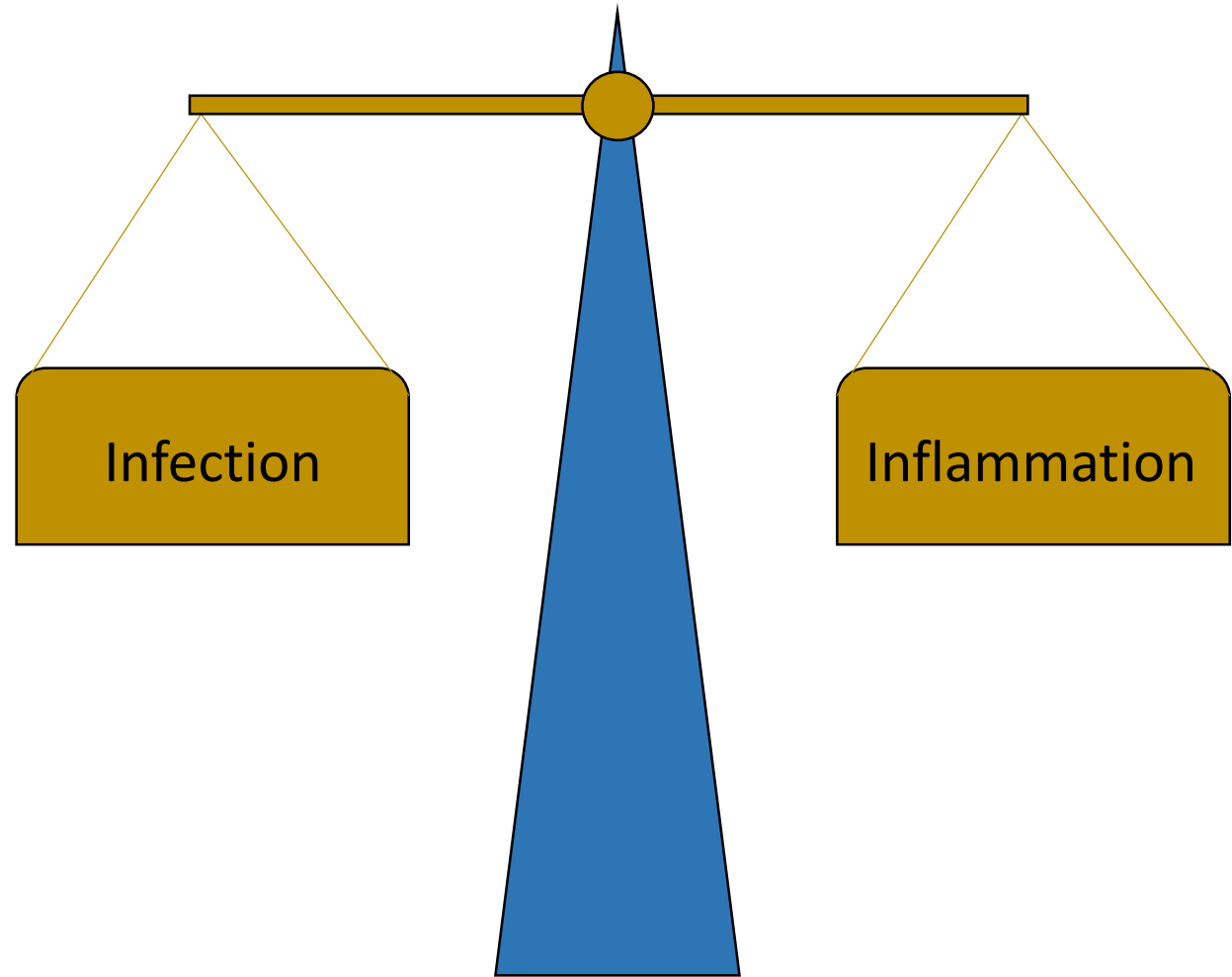


How do you experience all of this?

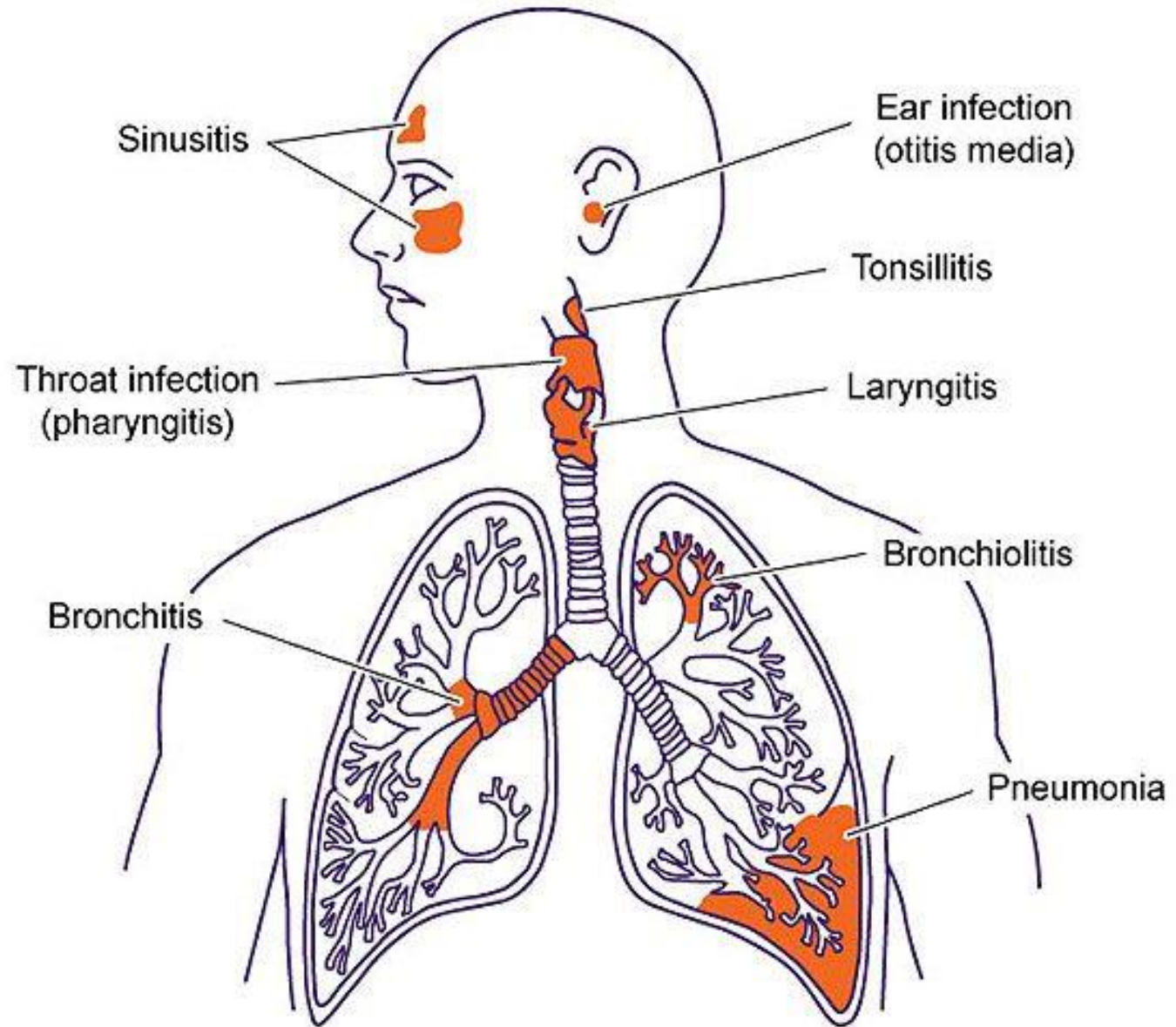


Overview

- Infections
- Inflammation
- Structural disease



Respiratory tract – infection

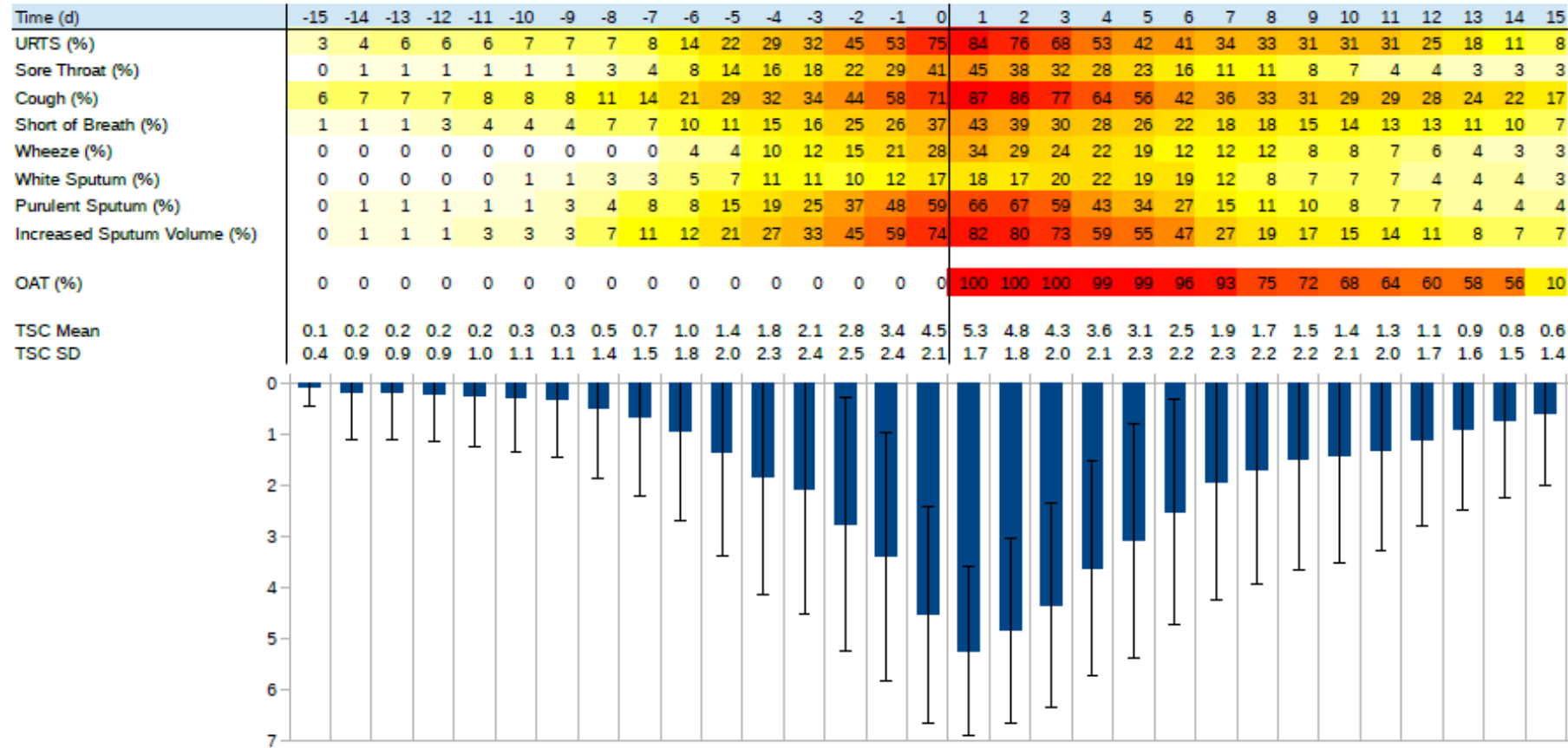




Respiratory infection is common

- 69 CVID patients completed daily diaries over winter for 3 months
- 170 'symptomatic exacerbation events'
 - i.e. nearly one a month
- 75 treated with antibiotics
 - i.e. about once every 3 months
- Only 9/69 patients had no 'symptomatic exacerbations' during the study period

When to take antibiotics

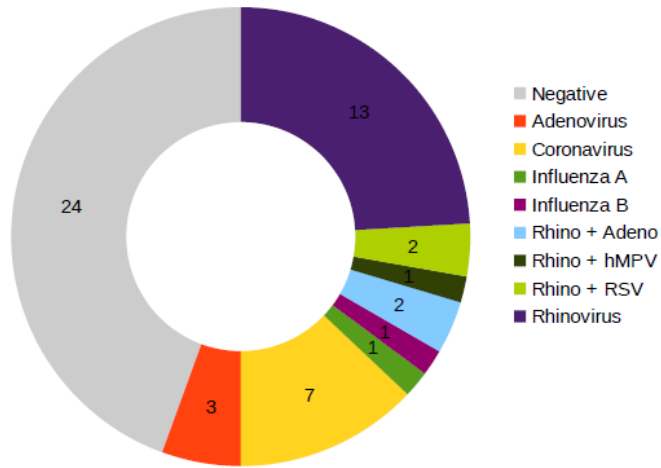


When to take antibiotics...

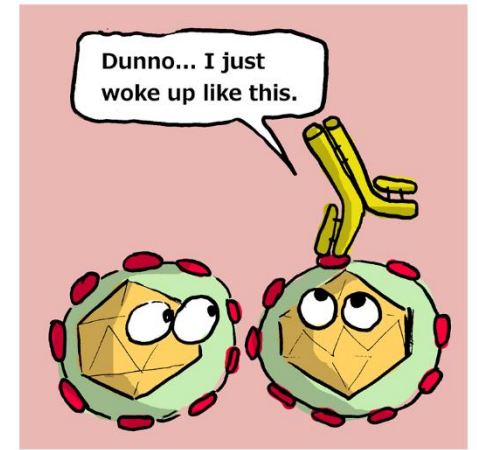
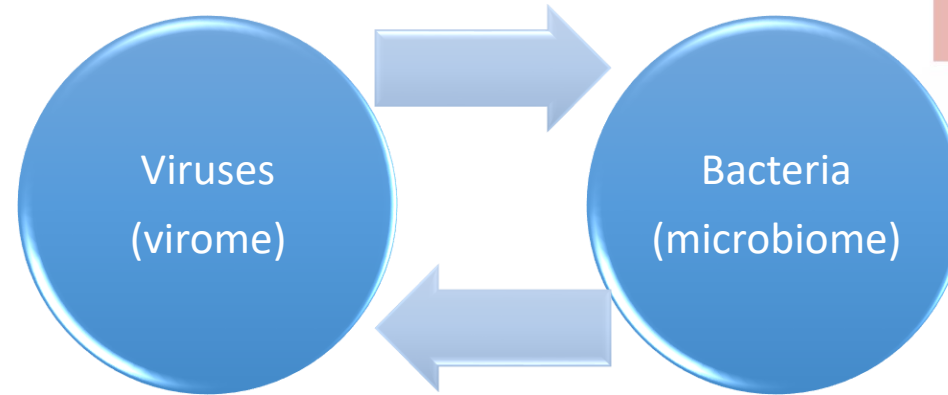
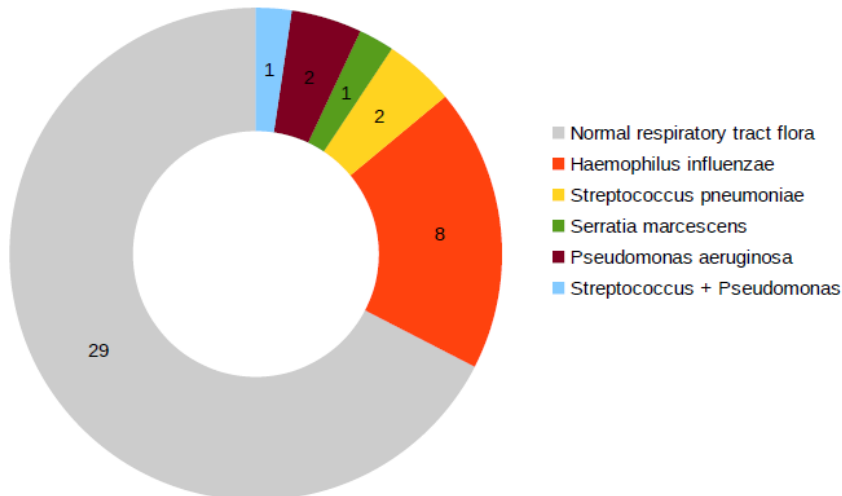
- People waited on average 5 days from start of symptoms to start antibiotics
- Response to antibiotics was slow if only upper respiratory tract symptoms or sore throat
- But response was quick if there was change in sputum
- ...?Viruses

Viruses in CVID respiratory infection

A



B



facebook.com/pedromics

Finding a virus does not exclude a bacterial element

It is fairly common to test positive for viruses anyway
- ?long-term infection

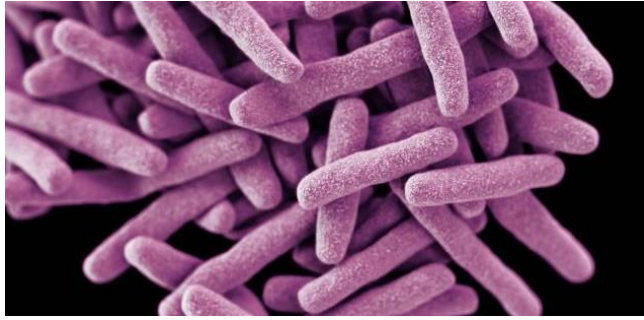
Usually you don't have any test results!

So, when SHOULD you take antibiotics?

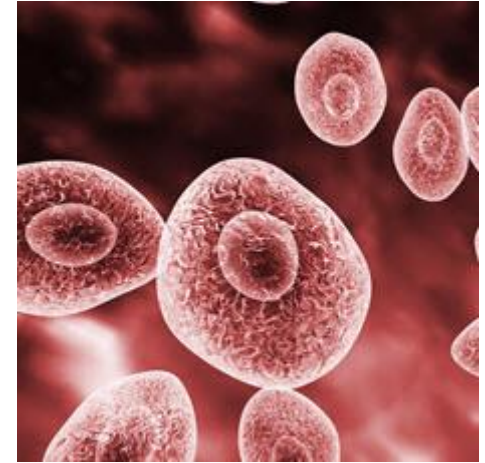
- Change in sputum
- Fever
- Shortness of breath
- At your discretion



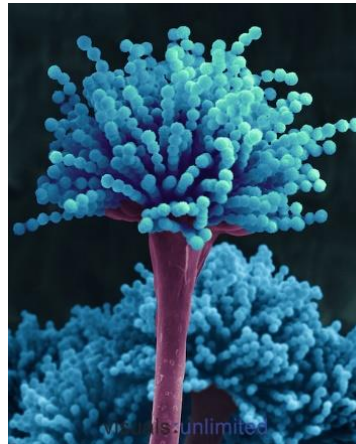
- What about prophylaxis?
- MAY be effective, but people on prophylactic antibiotics:
 - Wait longer to treat breakthrough infections
 - Leave more symptoms untreated
 - May have resistance



Especially if damaged lungs



Especially if on steroids

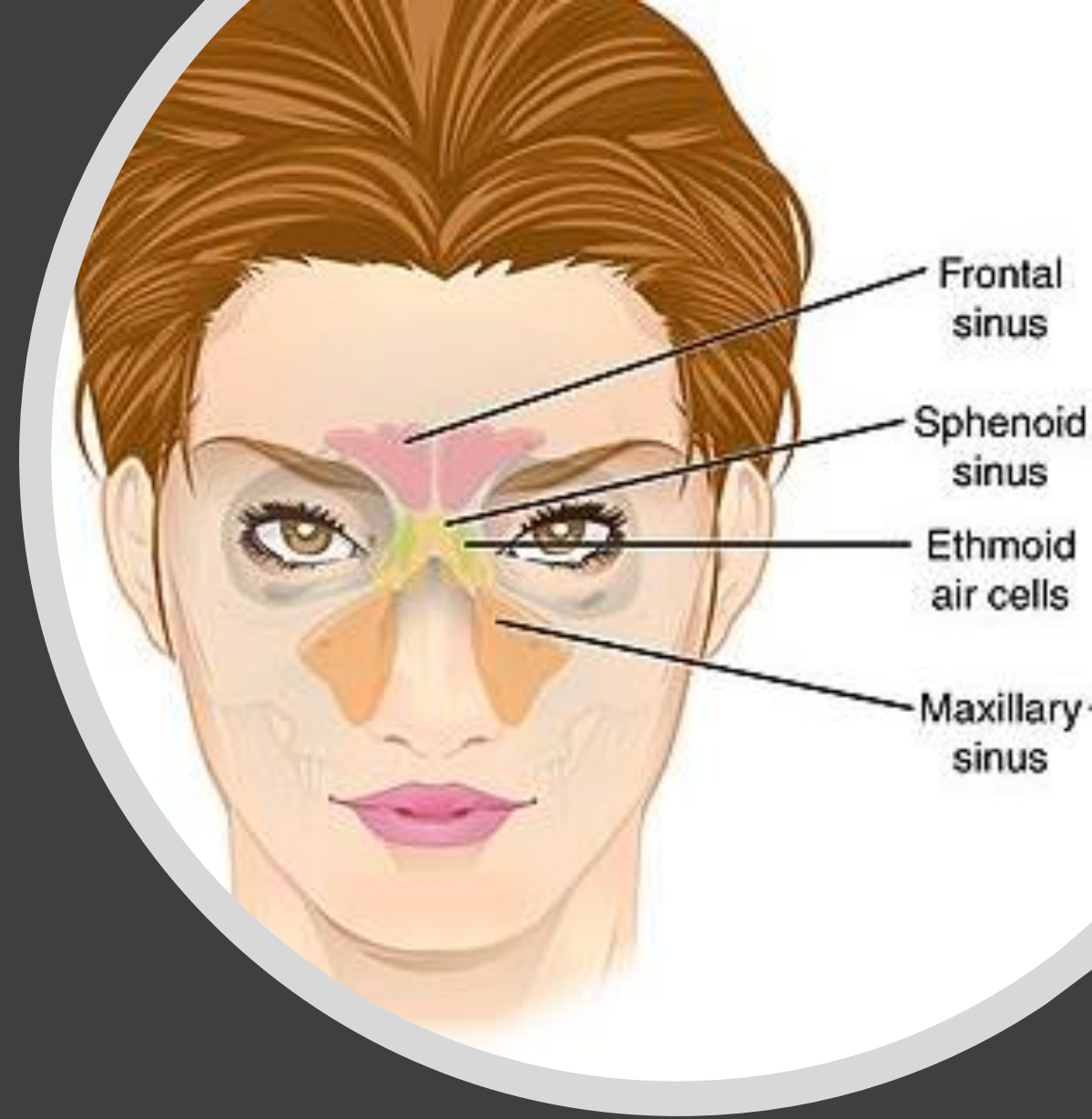


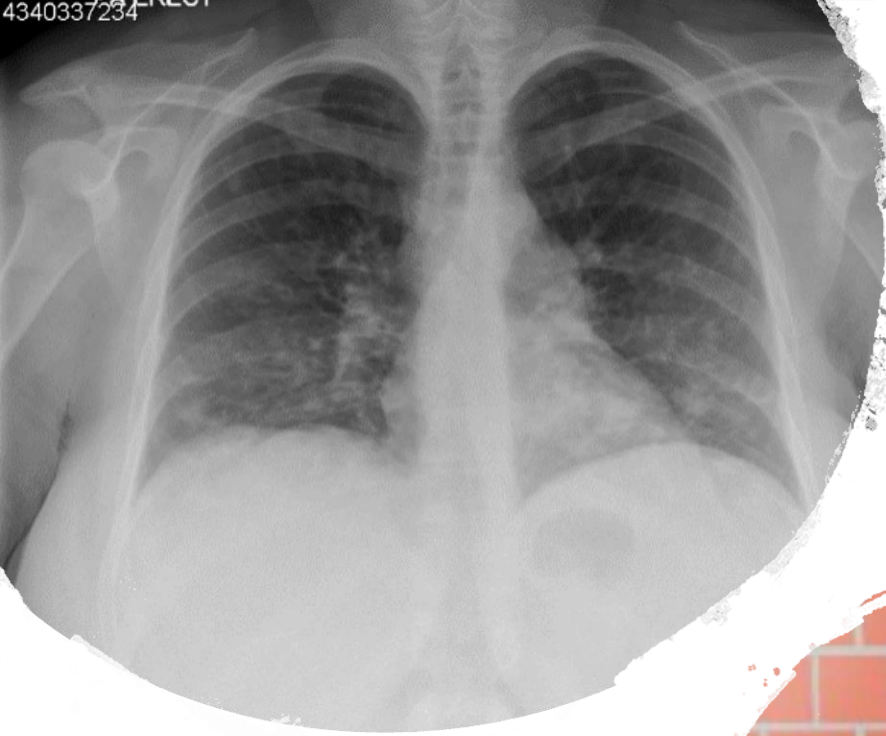
Certain immunodeficiencies

OR if cavities

Sinuses

- Very stubborn!
- Often need long courses of antibiotics
- Inhaled treatment variably effective, but worth a try
- May need surgery
- ?Inhaled immunoglobulins...





Lung inflammation (eg GLILD)

- Not well understood
- Very important to monitor
- Very important to treat if progressing



How to treat inflammatory lung disease

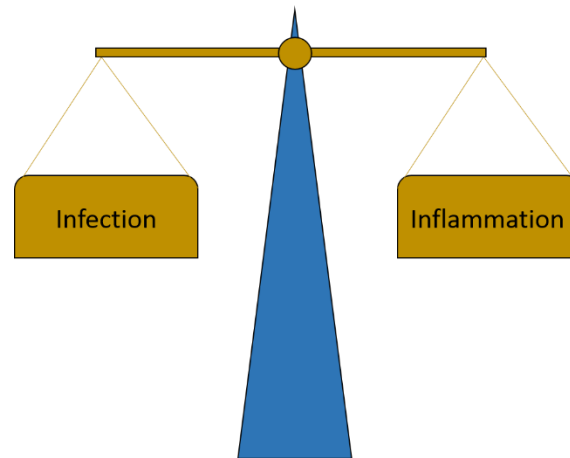
- Steroids



- Many other immunosuppressive drugs tried

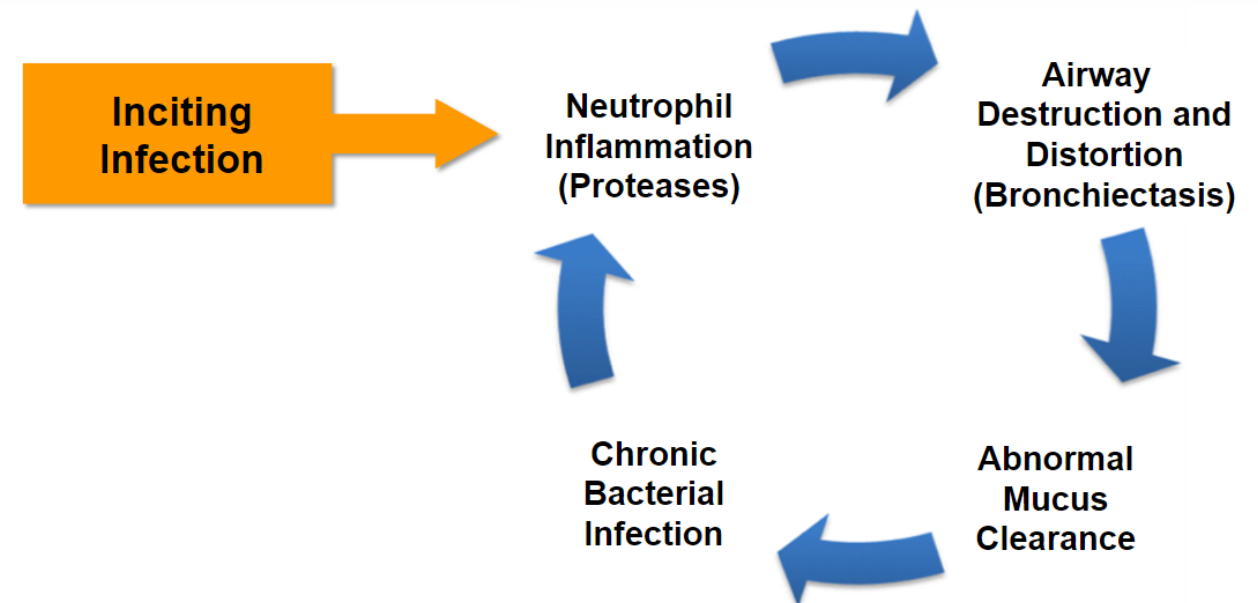
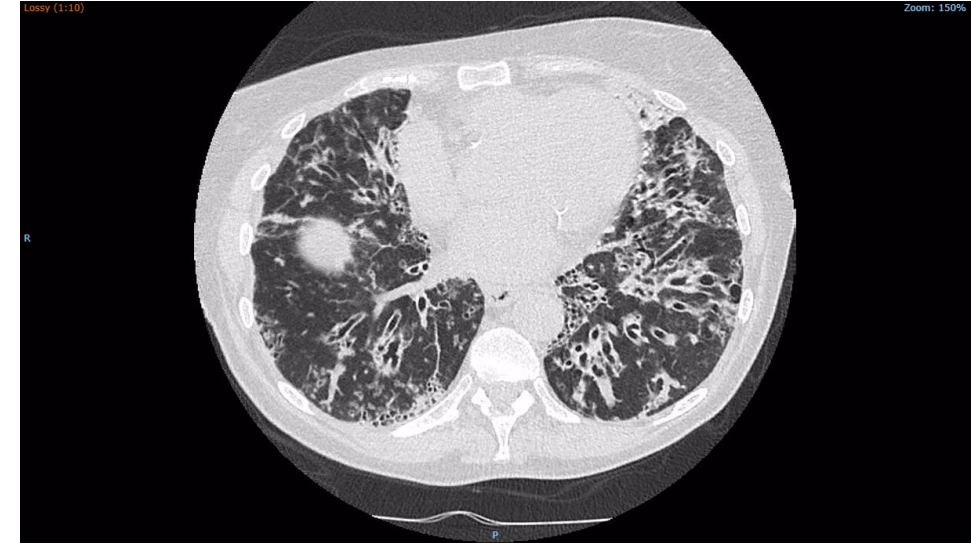


- Aim to keep immunosuppression to a minimum while still controlling lung inflammation



Lungs – structural disease

- Bronchiectasis
 - Widening of airways
 - ‘Vicious cycle’ of infection, inflammation, lung damage, failure to clear secretions
- Scarring / fibrosis
 - eg from untreated GLILD
- (Emphysema)



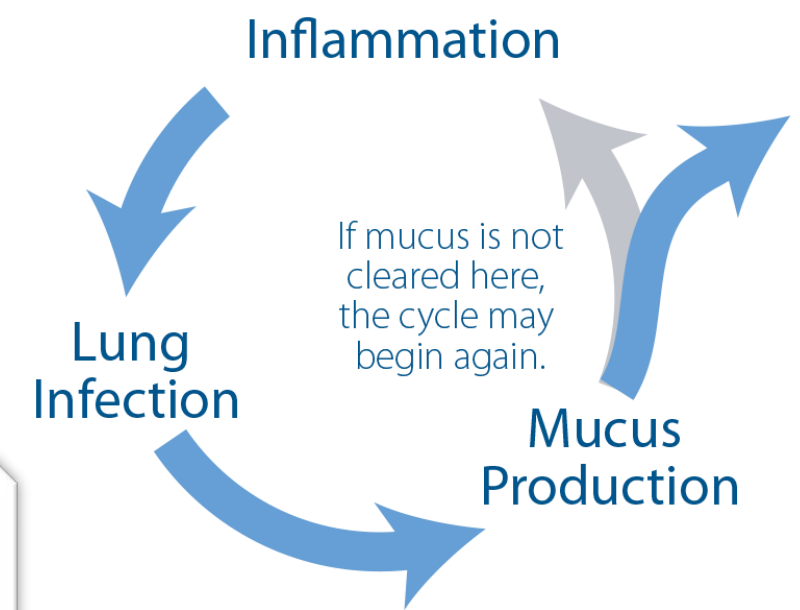
Bronchiectasis – management

- PHYSIOTHERAPY

- Prophylactic antibiotics

- Regular sputum culture

- Can be 'colonised' by bacteria
- Need to know which bacteria are present
- Should we aim to 'eradicate' bacteria?



inflammatory action

treat infections effectively

Giardia



Hard to diagnose
Easy to treat (usually!)

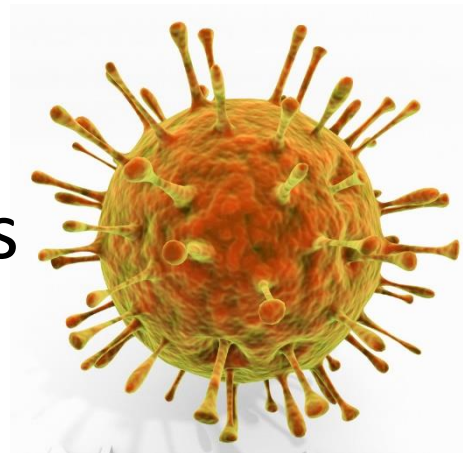
Campylobacter



Easy to diagnose
Often hard to treat
(make sure it's gone!)

Gastro-
intestinal
infections

Norovirus



Hard to diagnose
Very hard to treat

Gut – inflammation

- Risk of colitis in some PIDs
- Treatment = steroids etc
- Rigorously exclude infection first



Healthy



Moderate Colitis

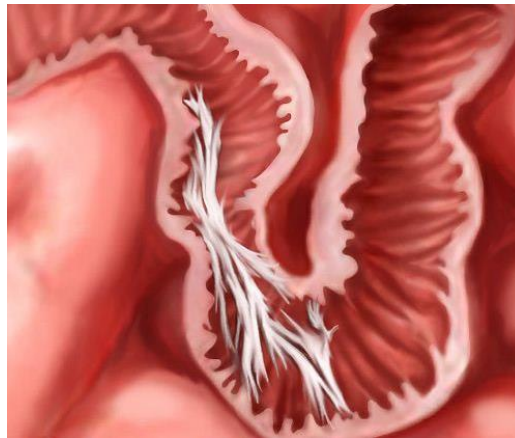


Severe Colitis

- “CVID enteropathy” – does it exist?!
 - Norovirus
 - Giardia
 - Inflammatory bowel disease
 - Non-specific findings on endoscopy
 - Other causes of diarrhoea (eg pancreas problems)
 - Irritable bowel disease

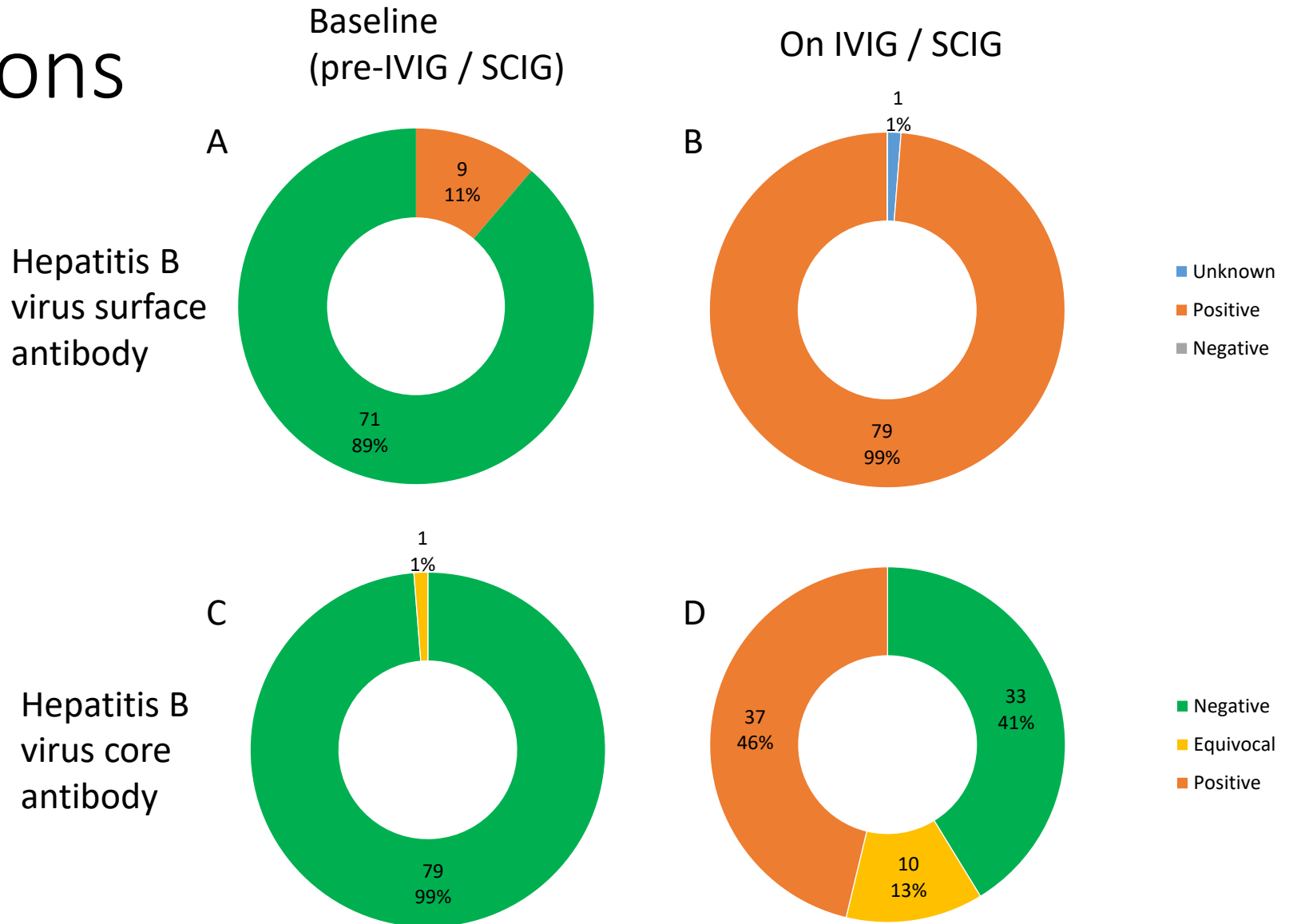
Gut – structural problems

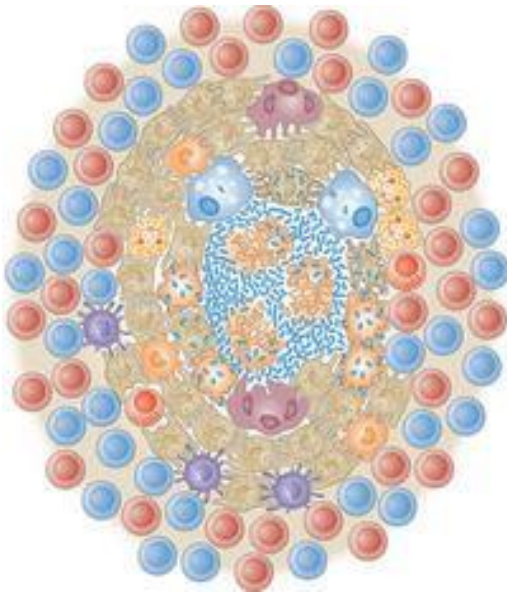
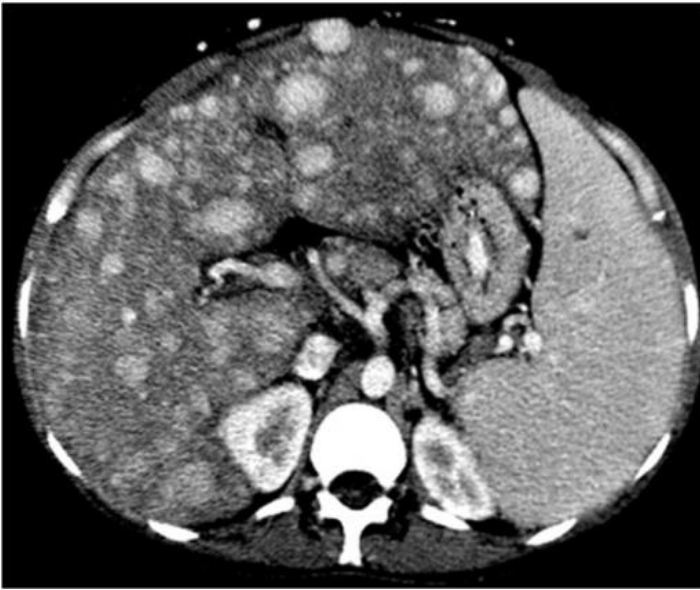
- Usually after surgery or inflammation



Liver – infections

- Cryptosporidium in some PIDs (eg CD40L deficiency)
- Liver abscess in some PIDs (eg CGD)
- Otherwise fairly rare...
- ...but tests are often positive!



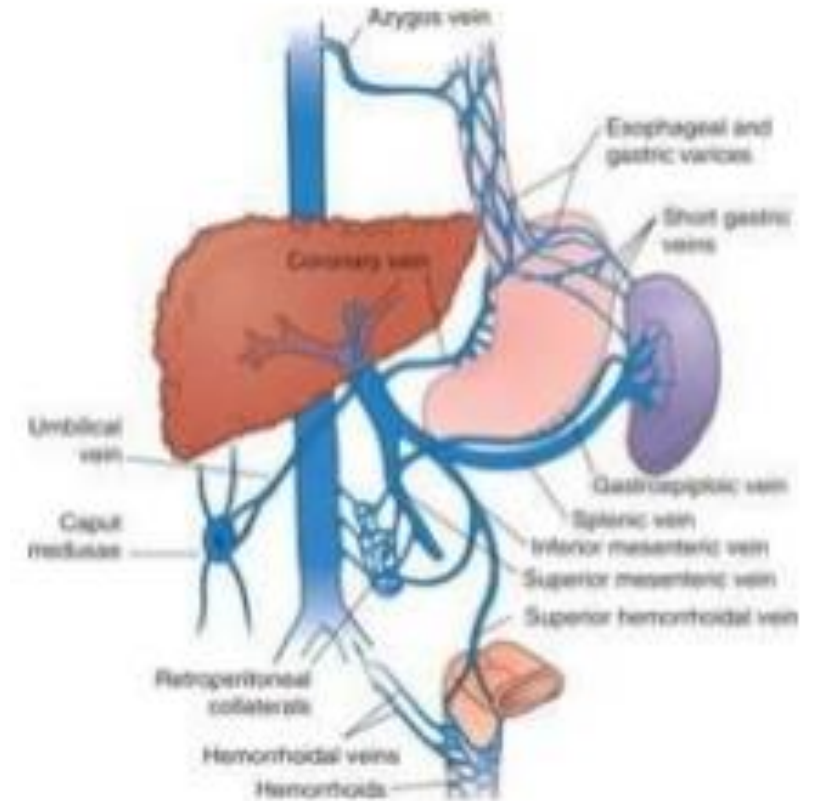


Liver – inflammatory disease

- Abnormal liver blood tests are common in CVID
- ‘Nodular Regenerative Hyperplasia’
- ‘Granulomatous hepatitis’

Liver – structural problems

- Usually result from long-term inflammation
- Increased liver stiffness, ‘portal hypertension’, ‘varices’





Liver disease investigation

Rule out infections (eg Hepatitis B, C and E)

Ultrasound, CT, MRI – does the liver look normal?

‘Fibroscan’ – are the liver and spleen stiff?

If so, look for varices (endoscopy) and consider biopsy

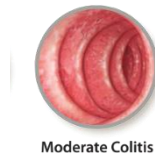
Liver disease management



Reduce the pressure in the system – beta-blockers



Target varices directly



?Reduce gut inflammation



?Role for steroids



??Liver transplant



Summary

- Lung infection
 - Main trigger for antibiotics should be changes in sputum
 - Ask about prophylaxis (especially PCP if you are on steroids)
- Lung inflammation
 - Needs careful monitoring
- Lung structural disease
 - Physiotherapy!
- Gut infection
 - Make sure it is gone!
- Liver infection
 - Remember your antibodies are not your own!
- Liver inflammation and structural disease
 - May need more than just an ultrasound

You need a team!

- Colleagues in:
 - Immunology
 - Respiratory medicine
 - Gastroenterology
 - Hepatology
 - Radiology
 - Pathology
- PATIENTS!

Thanks

