Small Intestinal Bacterial Overgrowth (SIBO)

The large intestine contains vast numbers of bacteria. These are essential for our health, produce vital nutrients and break down the fibre which we can't break down. But the small intestine should be relatively sterile. Unfortunately, this is not always the case. When an abnormal growth of bacteria develops in the small intestine of bacteria it's bad news. We call this condition small intestinal bacterial overgrowth (SIBO).

These bacteria in the small intestine typically feed off and ferment sugar. This leads to bloating and wind (sometimes foul-smelling). They sometimes ferment bile salts leading to fat malabsorption.

There are not just too many bacteria, there are also too few species; they lack diversity. There can be up to 50% phylum protobacteria. There can also be an excess of E Coli and Klebsiella.

The characteristic symptoms of SIBO are bloating, abnormal bowel movements (sometimes with smelly stools) and there can be weight loss. There can be vitamin and mineral deficiencies. It can mimic irritable bowel syndrome (IBS) and reflux oesophagitis. Sometimes the symptoms are wide-ranging affecting the skin and brain including anxiety. It can be a cause of fibromyalgia and auto-immune conditions. Bladder symptoms are also frequent.

Today SIBO is increasing alarmingly. One study found 34% of people presenting with gastroenterological problems had unsuspected SIBO (including 40-49% of those with IBS and 60% of those with diverticular disease).

But why are we seeing it so much more?

Our diets promote it. They are often high in sugar and refined carbohydrates which is perfect food for the bacteria. Ultra-processed foods (UPFs), which can make up half the average diet, contain a range of gut-damaging substances, most notably emulsifiers which damage the gut lining. Emulsifiers are present in virtually all UPFs (you can check the label for these).

Medications can also promote SIBO. These include antibiotics (which kill off friendly bacteria), non-steroidal anti-inflammatories (NSAIDs) (which cause leaky gut) and acid-blocking drugs (which block the acidity which protects us against harmful bugs - SIBO has been found in 50% of people taking PPIs regularly like omeprazole and lansoprazole). Surgical

treatment involving the intestine can also make people more prone to SIBO (in fact it was first discovered here and called blind loop syndrome).

SIBO can easily be confused with IBS but there are some clues. These include IBS following gastro-enteritis, transient improvement after antibiotics, transient improvement after stopping gluten, worsening with prebiotics (as part of a probiotic), worsening with fibre (especially worsening constipation) and unexplained low ferritin (iron).

One major problem of SIBO is it is hard to diagnose and often missed. Many GPs are not familiar with SIBO and don't have the tests to diagnose it and even gastro-enterologists miss it.

To make things more complicated there are subcategories od SIBO depending on the dominant gas produced (hydrogen sulphide, hydrogen, methane). This varies with the dominant species of bacteria. Each can cause different but overlapping symptoms which often needs different treatments.

For instance, methane is most often a sign of overgrowth of archaea species (not a bacteria) and the symptoms are usually bloating and constipation whereas hydrogen sulphide is typically produced by proteus mirabilis and most often causes diarrhoea and bloating There may be a rotten eggs smell, sensitivity to alcohol and to sulphur foods (onions, garlic) and halitosis. Hydrogen is normally produced by E coli and Klebsiella and also can cause diarrhoea and bloating. This type of SIBO often occurs after gastro-enteritis (gastro-enteritis increases the risk of IBS seven-fold), bloating can be marked and it responds well to a low carbohydrate diet). However mixed types exist.

Diagnosis is normally by breath tests but urine tests such as the organic acid test can help in the diagnosis as can stool tests such as comprehensive stool analysis. Blood tests may show low ferritin and low B12. X-rays or scans may show excess gas.

Treatment involves diet. This normally means cutting out sugar and most carbohydrates and sometimes yeasts. The specific carbohydrate diet and low FODMAPs diet are two commonly used diets for SIBO.

Antibiotics are often needed, usually for 4 to 6 weeks. These include rifaximin, metronidazole, ciprofloxacin, amoxicillin and others and will need a prescription. Herbal antibiotics such as berberine, oregano, garlic and neem can also be useful.