Alpha 1 Antitrypsin MZ Information & Research

News & Research Update

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Dear Subscribers,

In this issue a more in depth and elaborated piece on the Alpha 1 MZ liver reduced bile acid secretion, and the resulting small intestine bacterial imbalance (SIBO), causing vitamin and mineral deficiencies.

First off all, a reduced bile acid secretion of the MZ liver may be caused by the Hepatic Endoplasmic Reticulum (ER) stress, which reduces the functional capacity of the liver, which is further reduced by liver aging, and/or liver load events. Note: The recruitment secretory block phenomenon, which is unique for the MZ liver, leads to ER stress all zones of the liver.

Research & biobank data confirms a unique to MZ's high prevalence of biliary tract related morbidities, (Like gall stones) and a 3x higher probability of cholestasis during pregnancy. (Odd rate of 1:15) This confirms the hypothesis of a reduced bile acid secretion by the MZ liver, and the fact that most MZ's will experience their first issues around the age of 40-50 (aging of the liver) or during a high liver load event like e.g. pregnancy.

So, how do you notice these slow but continues changes in your body when your liver is aging and the amount of bile acid is reduced slowly year over year?
Well, bile acid is very important for the breakdown of fats, including the regulation of your small intestine bacterial balance. This means that you will notice bloating, gas, farting, inconsistency of your stool etc. All signs of an imbalance in your small intestines.
The problem is that it is a very very slow process, which increases slowly over the years when you are getting older, so you don't even think about it as being wrong, and accept it as a part of your life and getting older...!

However, a good gut balance is very important for the absorption of essential vitamins and minerals, and you may only notice the vitamins and mineral deficiency, when there is already a lot of damage done. Good examples are Vitamin B12 deficiencies which can permanent damage your neurological system and can put you even in a wheelchair, when not properly diagnosed in time.

Typically, a bile acid deficiency in your small intestine, leads to malabsorption of fats and fat-soluble vitamins (A, D, E and K). But it can also lead to an impaired calcium absorption, and it also disrupts the enterohepatic circulation, which in turn affects your vitamin B12.
This explains why especially the older Alpha 1 MZ's, have vitamin deficiency related issues.

Note: Also, a warning here about high dose supplementation. Educate yourself thoroughly or get good advice taken your liver status and bile acid deficiency into account. An example; be careful with supplementing Vit D3. The reason is that Vit D3 has to be converted to D25 by your liver, and when the capacity of the MZ liver is impaired at an older age, a high dose of D3 may not be tolerated.

Now we know that reduced bile acid creates an imbalance of the microbiome in your small intestine (Also called SIBO) you can imagine that the type of food consumption will have an impact on the intestinal bacterial balance as well. As an example, more fat will make it worse, because you need bile acid to break down the fat. So, you may consider a balanced healthy food intake, based on the knowledge that you have an impaired liver functional capacity, and a reduced bile acid availability.

You may also want to read a research paper about the beneficial effect of vinegar consumption (e.g. balsamic vinegar with a green salad) which is associated with regulating gut microbiome and metabolome.
Please note that vinegar is an acid, like bile acid. You can find this research paper in this section.
https://www.alpha1mz.org/alpha1-mz-gut

The outcome of this research paper is, that the intake of vinegar altered gut microbiota structure by upregulating Verrucomicrobia, Akkermansia, Hungatella and Alistipes, and down-regulating Firmicutes, Lachnospiraceae NK4A136_group and Oscillibacter. The researchers mention that their results imply that vinegar consumption has beneficial effects on regulating the gut microbiome.

And as a last note; Take a balanced approach, educate yourself, eat healthy and supplement in small doses only where necessary based on your measured food intake, and possibly corrected by blood tests. When you are not sure always consult your physician.