ABNORMAL FLORA IN IRRITATED BOWEL

- Gut flora identified with DNA technique.
- Future diagnoses will be easier.

People with irritable bowel syndrome (IBS) have a very abnormal gut flora. Researchers from the Laboratory of Microbiology demonstrated this using bacteria DNA from the faeces of patients, providing more insight into the cause of this common ailment. Their findings are published this month in the Gastroenterology journal.

In the intestines of IBS patients, the ratios between bacteria groups are different to those in healthy people. For instance, the researchers found relatively large numbers of Firmicutes and a big drop in the number of Bacteroidetes. ‘These changes are related to the disease and the acuteness of the symptoms,’ explains PhD student Sebastian Tims. So there isn’t one chief culprit; it is more like a fingerprint. Tims: ‘There are subtle differences, spread across several bacteria groups and these are clearly related to the disease.’

CHIP

During the experiment, Tims and his supervisor Marjana Rajlic-Stojanovic examined the gut flora of 62 people with irritable bowel syndrome and 46 healthy control subjects. They took samples of faeces and cultivated the bacteria DNA in them. Subsequently, they placed these on a chip which identifies known intestinal bacteria DNA. The patients also kept a symptoms diary which the researchers used to compare the acuteness of the disease with the specific symptoms. With these results, an objective test for the disease seems to be in sight. Diagnoses are currently made using the ’Rome II criteria’, where symptoms have to persist for at least six months. The study enables more pieces of the puzzle to fall into place. ‘This doesn’t mean that we can explain everything,’ says Professor Willem de Vos of Microbiology. ‘But we feel that we are heading in the right direction.’ For example, the researchers suspect that some of these changes can explain the symptoms. Intestinal pain could be caused by proteins released by the overabundant Firmicutes. A bloated feeling and flatulence result when there are less methane-producing bacteria to break down hydrogen gas.

SINGLE FRAME

De Vos is also pleased that this extensive study confirms the results from smaller experiments. The next step, he says, is to follow the progress of the disease. In a major trial carried out together with Ellen Kampman, professor of Nutrition and Cancer, and with the Gelderse Vallei Hospital, the group is monitoring about 100 patients for changes in the long term.

De Vos: ‘We are still only looking at a single frame and we are interested in the film.’

VISION

Hoorah, Bleker is doing nothing

Environmental and animal welfare organizations grumble loudly about state secretary Henk Bleker’s views on the mega-barn and intensive livestock farming. ‘Bleker is doing nothing and just leaves it to the market’, declares Klaas Breunissen of Milieudefensie (Friends of the Earth). Exactly, and a good thing too, says Ge Backus of the LEI.

‘Bleker thinks that government has a limited role to play in making livestock farming more sustainable. In recent years, the government got tough now and then, but not always successfully. Take the Reconstruction law of 2000, which led to an enforced removal of companies, protest from local residents and a popular campaign against the mega-barn. You always get unexpected effects, because intensive livestock is a complicated case. Bleker knows there is a limit to how much the livestock sector can be manipulated.

He thinks chain parties should take the initiative themselves to solve the problems in livestock farming – fertilizer, antibiotics, welfare, unpleasant smells and air pollution. A diverse committee that included Daan van Doorn, Pieter Winsenius, Ab Klink and Marijke Vos has just published an advice on this. The approach suits Bleker fine. Food companies and supermarkets have endorsed it too. This way, the ball is where it should be: in the court of the production chain. That’s where the problems should be solved, and quick.

The government should set criteria for this sector on matters of environment, public health and welfare, without prescribing how big companies can get. Counting animals is not an effective way to solve environmental and welfare problems. We have a tricky relationship with upscaling – we don’t really want it, but it happens anyway through market developments. For sustainability scale makes no difference. The government should now concentrate on getting rid of legislation that puts the brakes on sustainable farming. An example? Pig farmers in the ‘Better life’ market sector, with higher standards of animal welfare, are now allowed only 700 pigs per shed rather than 1,000. This just makes it unattractive for them. Like this the legislative framework holds back investments in sustainability.’

PROPOSITION

The biggest achievement in the history of chemistry is the fact that chemists are no longer the mad scientists they used to be.

Tijs Merijn Lammens, 2 December 2011