

## NASH/NAFLD Management Summary of the discussion

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Expert : O. James (Newcastle, UK)

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### 1. Demography

Considering the male : female ratio of the disease, Prof. James estimates that the ratio is 40:60. The mild excess of females having this disease is probably due to the higher frequency of mild obesity in this gender.

A high prevalence of NASH related cirrhosis is expected.

The presence of NASH is not restricted to developed countries. In India e.g., obesity and secondary diabetes mellitus are very frequent. A possible genetic explanation could make Indians more susceptible for obesity and type 2 diabetes mellitus, resulting in a high prevalence of NASH in this population.

### 2. Clinical aspects

The difference between liver steatosis and NASH is not clinically obvious.

ALT is less elevated in NAFLD (non alcoholic fatty liver disease) than in NASH. However, ALT levels of more than 100 U/l can be found in the presence of steatosis only. The AST/ALT ratio could be of some usefulness. When the ratio is smaller than 1, disease is often mild. AST level and the AST:ALT ratio rises as disease progresses.

High serum ferritin concentrations are often found in patients with NASH. However stainable iron on the liver biopsy is often absent or mild. Prof. James assumes that serum ferritin concentration is elevated as acute phase protein.

### 3. Pathophysiology

Mitochondrial injury could be present in NASH and ASH. Two recent studies demonstrated the presence of mitochondrial crystalline inclusions resulting in necrosis. In these cases not only macrovesicular but also microvesicular steatosis was present.

Mitochondrial DNA is more susceptible to mutations and deletions as it ages. Mitochondrial aging could be faster in NASH and ASH. However this remains a hypothesis.

### 4. Treatment

Although clear evidence and randomised trials are absent, a diet with low saturated fat (as suggested by the American Heart Association) could be a model.

Although gastroplasty is safer than jejunal-intestinal bypass surgery for the development of NASH, it is far from evident if gastroplasty is a treatment of NASH.

Also there is no evidence that phlebotomy is a treatment of NASH.

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