

## Regression of Fibrosis after Disappearance of Nash in Morbidly Obese Patients: A Prospective Bariatric Surgery Cohort with Sequential Liver Biopsies.

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### Abstract Text

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**Background:** Bariatric surgery induces disappearance of NASH from nearly 85% of patients and reduced the pathologic features of the disease after 1 year of follow-up. The outcome at 5 years, in NASH patients is not established

**Methods:** From May 1994 through May 2017, 198 morbidly obese patients with biopsy-proven NASH underwent bariatric surgery at the University Hospital of Lille, France (the Lille Bariatric Cohort). Clinical, biological, and histologic data were collected before, at 1 and 5 year after surgery

### Results:

Among 198 patients with NASH at baseline, 69% and 55% of patients performed respectively their 1 and 5 years liver biopsy. In a sensitivity analysis, patients with and without liver biopsy at follow up were not different in terms of : BMI, AST, HbA1c (A1c glycated hemoglobin), NAS and Brunt fibrosis score at baseline as well as for BMI, AST, HbA1c at follow-up 1 and 5 years.

At 1 year after surgery, NASH had disappeared in 86% of patients, steatosis improved ( $58\pm 20$  vs  $18\pm 20$ ), as NAS (Nafld Activity Score) ( $4.7\pm 1.3$  vs  $1.7\pm 1.4$ ) and fibrosis (Brunt score: median 2 [1-3] vs 1[0-2.5]) (For all  $p<0.001$ ).

At 5 years, the rate of NASH disappearance was identical (85%) than at 1y. Conversely, fibrosis still improved between 1 and 5 years: 1 [0-2.5] vs 0 [0-1] (Brunt score in median,  $p<0.001$ ). In the subgroup of patients with fibrosis at baseline, the mean improvement at 1 and 5 years was  $-0,58 \pm 0,91$  and  $-1,08 \pm 1,32$  respectively. The improvement of fibrosis (defined as at least -1 stage of Brunt score at 5 year) was associated with better response to surgery at 1 year with a higher weight loss (deltaBMI: 12.2 [10.5-14.7] vs 8.9 [5.8-10.1]  $p=0.03$ ) and a better histological improvement (delta NAS: -2 [-3; -1] vs -4 [-4; -3],  $p=0.002$ ).

The clinical, the metabolic profile and the liver blood test improvement observed at 1 year were also sustained between 1 and 5 years after surgery: BMI ( $37.7\pm 7$  vs  $36.6\pm 8$ ), AST ( $23\pm 8$  vs  $26\pm 14$ ),  $\gamma$ -GT ( $32\pm 23$  vs  $41\pm 60$ ), LDL ( $2.7\pm 0.9$  vs  $2.8\pm 0.9$ ), HDL ( $1.29\pm 0.29$  vs  $1.33\pm 0.29$ ) and mean insulin resistance index (HOMA-IR:  $1.86\pm 2.6$  vs  $1.65 \pm 1.25$ ), HbA1c ( $6\pm 0.9$  vs  $6\pm 0.9\%$ ) ( $P>.05$  for each comparison).

**Conclusion:** The rate of disappearance of NASH after bariatric surgery (85%) is sustained until 5 years. The regression of fibrosis after surgery continued to improve between 1 and 5 years. The improvement of fibrosis is associated a better control of the disease and a higher weight loss at 1 year.

### Disclosures

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Sebastien Dharancy – Intercept: Board Membership; Novartis: Speaking and Teaching; Nanobiotix: Advisory Committee or Review Panel; Abbvie: Speaking and Teaching; Astellas: Speaking and Teaching; Chiesi: Board Membership

The following people have nothing to disclose: Guillaume Lassailly, Alexandre Louvet

Disclosure information not available at the time of publication: Robert Caiazzo, Viviane Gnemmi, Emmanuelle Leteuvre, Florent Artru, Massih Ningarhari, Valerie Canva, François Pattou, Philippe Mathurin