

## Metformin: A Therapeutic Option for Treating Nonalcoholic Fatty Liver Disease

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### To the Editor:

We read with great interest the recent article produced by Lewis and Ford [1] on the diagnosis and management of non-alcoholic fatty liver disease (NAFLD). The approach of NAFLD in terms of therapy is currently based on lifestyle intervention, while there is no consensus on an effective pharmacological treatment. In the treatment section, the authors examined the role and the efficacy of metformin in association with a dietary regimen to improve abnormal liver function tests in liver steatosis. Variable doses of metformin were generally used in clinical practice [2]. Only one small open-label, single-arm study used 1 g/day metformin, while higher and variable doses of metformin were generally used [3]. Recently we have reported the efficacy of a treatment with low-dose metformin compared to dietary measures alone in obese, non-diabetic patients with NAFLD in a 6-month prospective, randomized study [4]. Fifty patients were enrolled and randomized into two groups: the first group ( $n = 25$ ) was given metformin (1 g/day) plus dietary treatment and the second group ( $n = 25$ ) was given dietary treatment alone. At the end of the study, the proportion of patients with echographic evidence of fatty liver was reduced in both the metformin ( $p < 0.0001$ ) and the diet group ( $p = 0.029$ ). Moreover, anthropometric parameters (i.e., BMI, waist circumference) significantly decreased in both groups ( $p < 0.001$ ). Fasting glucose, insulin resistance (evaluated as HOMA-IR), and serum adiponectin decreased in both groups, although these

changes reached statistical significance only in the metformin group. In this group, HOMA-IR decreased from  $3.3 \pm 1.6$  to  $2.4 \pm 1.2$  ( $p = 0.003$ ) while it decreased from  $3.2 \pm 1.6$  to  $2.8 \pm 1.1$  (NS) in the diet group. Similarly, the proportion of patients with impaired fasting glucose declined from 35 to 5% ( $p = 0.04$ ) in the metformin and from 32 to 12% (NS) in the diet group. Our study suggests that a low dose of metformin might be proposed for NAFLD. In accordance with the author, we conclude that metformin in association with dietary measures in appropriate patients with hyperglycemia syndrome can be used and may produce improvement of NAFLD.

### References

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