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Combination of blood tests for fibrosis and cirrhosis to assess liver prognosis in CHC

Newer therapies for chronic hepatitis C are promising due to a high rate of sustained viral response and few side effects. Although these therapies are not yet readily available, investigators are considering the best way to evaluate and monitor response. Liver biopsy is often performed in chronic hepatitis C (CHC) patients to assess liver fibrosis. In addition to biopsy, blood fibrosis tests are available and may offer advantages over more invasive testing. The authors conducted a study to compare the prognostic accuracy of several blood fibrosis tests and liver biopsy for predicting liver-related events in CHC patients. A secondary study was conducted to evaluate if the combination of blood fibrosis tests can improve assessment of prognosis. The authors studied 373 patients who had compensated CHC, liver biopsy, and blood tests that target fibrosis or cirrhosis, including APRI, FIB4, Fibrotest, Hepascore, FibroMeter, and CirrhoMeter. The investigators recorded two clinical outcomes in the study: liver-related death and significant liver-related events (SLRE), such as ascites, encephalopathy, jaundice, large esophageal varices, variceal bleeding, hepatorenal syndrome, and hepatocellular carcinoma. The study showed that after a median follow-up of 9.5 years, 47 patients had SLRE and 23 patients died from liver-related disease. For the first SLRE, the blood tests showed a higher prognostication than liver biopsy. Furthermore, multivariate analysis showed FibroMeter, CirrhoMeter, and sustained viral response as independent predictors of the first SLRE. The combination of FibroMeter and CirrhoMeter into a new FM/CM classification improved the liver-prognosis assessment compared to liver biopsy staging or any single tests by identifying five subgroups of patients with significantly different prognoses. The authors concluded that some blood fibrosis tests are more accurate than liver biopsy for determining prognosis in CHC patients. Furthermore, combining two of the fibrosis tests—one diagnostic for fibrosis and the other for cirrhosis—optimizes assessment of liver prognosis.

Boursier J, Brochard C, Bertrais S, et al. Combination of blood tests for significant fibrosis and cirrhosis improves the assessment of liver-prognosis in chronic hepatitis C. *Aliment Pharmacol Ther.* 2014;40:178–188.

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Vitamin D as an early predictor of multiple sclerosis activity and progression

Multiple sclerosis is a common cause of neurological disability in young adults, but the etiology of the disease is unknown. Most patients have episodes of inflammatory demyelination followed by treatment-resistant disease progression and brain atrophy. A higher risk of multiple sclerosis (MS) in individuals with low vitamin D intake or low circulating 25-hydroxyvitamin D 25(OH)D has been reported. Therefore, supplementation with vitamin D could potentially benefit a large proportion of patients with MS. The authors conducted a study to determine if vitamin D levels early in the disease process influenced long-term disease outcomes in subjects who were already participating in the Betaferon/Betaseron in Newly Emerging Multiple Sclerosis for Initial Treatment (BENEFIT) trial. The authors studied 465 patients who had at least one 25(OH)D measurement. The majority of patients had measurements at baseline and six and 12 months. These patients were then followed up clinically for five years and by magnetic resonance imaging. Three outcome categories were analyzed using clinical and MRI testing: time to definite diagnosis of MS, MS activity, and MS progression. Of interest, higher 25(OH)D levels predicted reduced MS activity and a lower rate of disease progression. Furthermore, patients with serum 25(OH)D concentrations of

50 nmol/L or more had a four times lower change in T2 lesion volume, a twofold lower rate of brain atrophy, and lower disability compared to those with lower vitamin D concentrations. The authors concluded that results from this large longitudinal study showed that higher serum 25(OH)D levels predicted lower degrees of MS activity, MRI lesion load, brain atrophy, and clinical progression during the five years of follow-up. This suggests that identifying and correcting vitamin D insufficiency may be important in the early treatment of MS.

Ascherio A, Munger KL, White R, et al. Vitamin D as an early predictor of multiple sclerosis activity and progression. *JAMA Neurol.* 2014;71(3):306–314.

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