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Tackling the Unmet Need HEad On—What Does HE Look Like?

Announcer:
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Dr. Jesudian:
Hello, I'm Arun Jesudian, and I'm an Associate Professor of Clinical Medicine at Weill Cornell Medicine in New York, New York. And today I'm going to be talking to you about Tackling the Unmet Need HEad On – What Does Hepatic Encephalopathy Look Like?

So, first let's talk about why patients develop hepatic encephalopathy. These are patients with cirrhosis of the liver and cirrhosis of the liver that is causing portal hypertension or a backup of blood flow through the liver. In this setting, two major problems can arise: one is hepatic insufficiency, or the liver is so scarred up and damage from whatever caused the cirrhosis that there are fewer hepatocytes, healthy liver cells, around to do their job; one of those jobs being removing toxins like ammonia from the bloodstream. And the second thing that happens is portosystemic shunting of blood around the liver.

In this setting of portal hypertension, where blood can't flow through that scarred-down shrunken nodular liver, it looks for ways to flow around the liver and it finds portosystemic shunts which allow ammonia-rich blood coming from the intestines to flow around the liver and reach other parts of the body, including the brain. Bacteria within our intestines, especially our colon or large intestine, break down proteins, generate ammonia, and our liver usually would remove this ammonia from the bloodstream. But in the setting of hepatic insufficiency and portosystemic shunting, we see ammonia reach the brain, cross the blood-brain barrier, and caused the signs and symptoms of hepatic encephalopathy.

Now, what are these signs and symptoms? Well, first up, hepatic encephalopathy is a reversible neuropsychiatric syndrome. And what I mean by that is that it can go away entirely if either cirrhosis improves considerably, for example, someone was drinking too much alcohol and when they stop, their cirrhosis and portal hypertension resolves, or if we replace their diseased liver with a healthy liver through liver transplantation. So, hepatic encephalopathy can go away entirely. But also the signs and symptoms can improve with treatment or can worsen during the course of the disease, or can worsen suddenly, requiring hospitalization.

But the symptoms of hepatic encephalopathy range from mild cognitive impairment all the way through coma, patients who are very sick and need to be in the intensive care unit. It is a clinical diagnosis, so there are no great blood tests for hepatic encephalopathy, including serum ammonia; that's a very unreliable blood test when we take it from a venous sample and it's not sent to the lab on ice. It is much better to evaluate our patients with cirrhosis and portal hypertension for their memory, for their alert and orientation status, whether they have brain fogginess, looking for signs and symptoms such as particular tremors like asterixis of their hands. This is a much more accurate way of diagnosing and grading the severity of hepatic encephalopathy as opposed to sending a blood test like ammonia.

Now, our patients can have non-hepatic encephalopathy related cognitive decline. And it's important to distinguish that from hepatic encephalopathy. Some examples of that are Parkinson's disease or alcohol-related cognitive impairment that's not related to cirrhosis

and portal hypertension. An example of that is Wernicke encephalopathy. Some patients have mild cognitive impairment, which is a cognitive decline that's not related to an acute medical or neurologic condition such as hepatic encephalopathy. But this is a cognitive decline that is greater than expected for normal aging. And importantly, it does not affect daily function. And that is in contrast to overt hepatic encephalopathy, which clearly does affect daily function. Patients can also have dementia, be that Alzheimer's disease or vascular dementia or Parkinson's dementia. And all of these should be distinguished from a Patek encephalopathy so that they can be treated properly.

How do you distinguish hepatic encephalopathy from dementia? It can be difficult, but some ways include hepatic encephalopathy having a fluctuating course; it can get better, it can get worse, versus a progressive decline that is characteristic of dementia. Hepatic encephalopathy is reversible through treatment. And dementia is generally associated with an irreversible cognitive impairment. Patients with hepatic encephalopathy have that characteristic flapping tremor of their hands called asterixis. That is not usually seen in dementia. If you do check a serum ammonia level, find that it's elevated, that's much more consistent with hepatic encephalopathy than it would be dementia. We will see signs of cirrhosis in patients with hepatic encephalopathy. For example, in their bloodwork, you may see low platelets or thrombocytopenia, or when you're talking to them, you may identify risk factors for chronic liver disease, such as alcohol use and abuse or metabolic syndrome. And if you were to employ cognitive testing, you could see mild cognitive impairment in subtle hepatic encephalopathy that is different from what you would see in dementia.

So, thank you very much for your attention.

Announcer:
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