

However, we would like to clarify that we identified both nonalcoholic fatty liver disease (NAFLD) and cryptogenic cirrhosis (grouped together in our analysis) rather than cryptogenic cirrhosis alone as the most important predictor of PVT (odds ratio, 1.5; 95% confidence interval, 1.33-1.71;  $P < 0.001$ ).<sup>2</sup> This would not be surprising because most patients with cryptogenic cirrhosis most likely had underlying NAFLD or nonalcoholic steatohepatitis (NASH).

The authors had also analyzed UNOS data with the aim of examining independent associations between NASH cirrhosis and PVT at the time of liver transplantation.<sup>3</sup> In their analysis, Stine et al included all patients undergoing liver transplantation with PVT. Importantly, body mass index was analyzed as a continuous variable rather than using a specific cutoff value. Patients with cryptogenic cirrhosis were excluded, and as stated, diabetes was accounted for using interaction terms with NASH (interchangeable with fatty liver disease etiology in UNOS data) and obesity. Despite some differences in design and the analytic approach, they report nearly identical association of fatty liver disease etiology with PVT at transplantation (odds ratio, 1.55; 95% confidence interval, 1.33-1.81;  $P < 0.001$ ), although body mass index as a continuous variable was not a predictor of PVT in the final model. Despite some limitations of the UNOS data, including a reporting bias of higher grade PVT,<sup>2</sup> taken together, our studies add further epidemiologic evidence for the prothrombotic risk associated with fatty liver disease and should at least maintain a curiosity in the impact of obesity on thrombotic risk. A recently published study described remarkably reduced hepatic venous pressure

gradients in cirrhotics over a 16-week period with weight loss of at least 5% in regardless of etiology of cirrhosis, although Childs-Pugh score did not change.<sup>4</sup> It is possible that the low portal venous flow state of portal hypertension in cirrhosis may accentuate the risk for PVT in patients with obesity and represent an independent risk factor.

Importantly, the authors highlight conflicting reports on the prohemostatic contributions of NAFLD versus obesity, and the complex interplay of these factors.<sup>5,6</sup> We support their forward-looking call for further mechanistic studies in well-phenotyped patients to better define thrombotic risk in NAFLD and metabolic syndrome, with potential clinical impact beyond mitigating the risk of PVT in patients with cirrhosis.

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## Letter

### OPEN



# Allocation of Organs Should be Based on the Current Status of Medical Science

Bruno Reichart, MD,<sup>1</sup> Ulrich Schroth, JSD,<sup>2</sup> and Karl-Walter Jauch, MD<sup>3</sup>

We refer to the recent article in your journal "Transplantation in Germany" by Nashan et al.<sup>1</sup> We would like to respond to the section dealing with audit results of the German Assessment Committee (of the German Medical Association), especially that concerning our Department of Cardiac Surgery at Munich University. It was alleged that manipulation of

patient's files and treatment irregularities occurred to make our patients appear sicker and thus ultimately eligible for high urgency (HU) status (equivalent to United Network for Organ Sharing 1A), and that the case was passed to the public prosecutors.

After careful evaluation, the state attorney recently resolved the accusations of a possible 17 homicides, judging

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All authors participated actively in formulating and finally reviewing the letter, B.R. and K.-W.J. from the medical point of view and U.S. for the legal point of view.

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that our 17 patients were rightfully on the HU list, and their inclusion did not therefore unfairly impair the chances of patients at other hospitals.

The state attorney also commented that in her view, and this accords with expert opinion, the guidelines for HU listing do not reflect current scientific knowledge. This problem is not unique to Germany, as the recent article of the North American heart transplant surgeon J. G. Rogers demonstrates.<sup>2</sup> The guidelines do not, for example, include recalcitrant tachycardia nor concomitant signs of right ventricle (RV) failure as defined by decreased RV ejection fraction; significant tricuspid incompetence; or additional severe liver and renal failure. All our patients needed continuous intensive care treatment. However continuous inotropic support, 1 of 4 prerequisites for HU listing in Germany, was deemed inappropriate and potentially dangerous due to side effects such as tachycardia, increase of pulmonary vascular resistance, and reduction of regional blood flow within organs; consequently, mortality would have been expected to rise.<sup>3</sup> We therefore provided such treatment only as required on an intermittent basis.<sup>4,5</sup> It may thus be important to review the HU listing criteria in Germany and elsewhere to address modern clinical best practice.

Finally, Figure 3 of the article requires further explanation. As shown, the steady decline of the number of deceased

donors commenced in 2010 and lasted until it reached a new low baseline by the end of 2013. However, public accusations of misconduct only began in 2012, by which time, the donation rate was already markedly reduced. The “German transplant scandal” cannot therefore be the sole cause of the observed decline, there must be other causes, as mentioned in the article.

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## Cut the “Gordian Knot”

Günter Kirste, MD, PhD<sup>1</sup>

We have learned from the article by Nashan et al,<sup>1</sup> that Germany has one of the most complex systems of organ donation and transplantation. The authors describe the situation of the organization of both organ donation and transplantation in Germany. They explain the reduction of donors from 16 donors PMP in 2010 to 10 donors PMP in 2014 due to a number of scandals in the allocation of organs in recent years. However, the article does not address whether the complexity of the system is the reason for the low number of donors PMP and does provide any solutions to fixing the situation.

The article consisley reports 3 scandals which have stunned the transplant community. However, the article misses to report the first scandal in the allocation of a liver at a Bavarian University hospital years ago. Everyone involved in the system realized this case was without any kind of consequences for the people involved. The authorities looked at the case and did nothing. Violation of allocation rules was no criminal offence at that time. This was discussed significantly within the community. Knowing that nothing would happen, doctors might have been encouraged to report false laboratory values or manipulate blood samples to get an early access to allocation of organs for patients.

Background is certainly a bit more complex. Lack of validation of laboratory results and probability control the allocation of organs combined with an extremely complicated system of chaired, hidden and intransparent communications and responsibilities. However, this is not an excuse for scandals. There is an ethical and moral obligation for doctors to behave adequate in a situation of extreme scarcity of organs.

Another reason for the decline in donor numbers starting in 2010 in Germany is the change of the German Transplant

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