

regimen. For each of the subjects, we determined twice weekly HD clearance needed to “complement” the residual renal function, not to suggest that twice weekly HD be initiated to “supplement” the renal function of individuals who might not have required dialysis initiation. In addition, the basis for clearance calculations did not exceed the standard weekly urea clearance target of 2.3 that is generally recommended in clinical guidelines for HD.⁴ Notably, our theoretical ideal twice weekly dialysis group had a measured standard weekly urea clearance of 1.02 volumes, which is approximately one-half of desired weekly clearance, and therefore, this group needed HD.

Second, although we agree with Dr. Rosansky that failure to control volume with diuretics might be a reason to initiate dialysis, we disagree that all patients in this scenario should start conventional thrice weekly treatments. Our calculations suggested that the volume removed on twice weekly HD, even with a tight upper limit of dialysis ultrafiltration rate <13 ml/kg per hour, may allow adequate weekly fluid control in many patients with residual renal function. Optimization of diuretic use in such patients, even when dialysis is initiated, may further aid in decreasing the ultrafiltration needs.

Finally, we agree that preserving residual kidney function is important and perhaps not emphasized enough in the care of HD patients. To that end, twice weekly HD in patients where it is feasible, may allow for greater native renal function longevity. We also hope that our study provides insight to incremental HD, so that it can be a real option for the appropriate patient, rather than just a default prescription for patients with limited resources.

1. Rosansky SJ. Dialysis should be started when absolutely necessary, not early and incrementally. *Kidney Int Rep.* 2018;3:216.
2. Chin AI, Appasamy S, Carey RJ, et al. Feasibility of incremental 2-times weekly hemodialysis in incident patients with residual kidney function. *Kidney Int Rep.* 2017;2:933–942.
3. United States Renal Data System. 2016 USRDS annual data report: Epidemiology of kidney disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2016.
4. National Kidney Foundation. KDOQI clinical practice guideline for hemodialysis adequacy: 2015 update. *Am J Kidney Dis.* 2015;66:884–930.

Andrew I. Chin^{1,2}, Suresh Appasamy¹, Robert J. Carey¹ and Niti Madan¹

¹Department of Internal Medicine, Division of Nephrology, University of California, Davis School of Medicine, Sacramento, California, USA; and ²Division of Nephrology, Sacramento VA

Medical Center, VA Northern California Health Care Systems, Mather Field, California, USA

Correspondence: Andrew I. Chin, Division of Nephrology, University of California, Davis, 4150 V Street, Suite 3500, Sacramento, California, USA 9581. E-mail: aichin@ucdavis.edu

Received 17 September 2017; accepted 18 September 2017; published online 21 September 2017

Kidney Int Rep (2018) 3, 216–217; <https://doi.org/10.1016/j.ekir.2017.09.007>

© 2017 International Society of Nephrology. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Re: Further Evidence Supporting the Accuracy of Quantitative Magnetic Resonance Imaging for Evaluating Iron Load in Dialysis Patients



To the Editor: In his editorial accompanying our article, Daniel Coyne raises important issues regarding the validity of magnetic resonance imaging (MRI) for quantifying iron load in dialysis patients.^{1,2} We are disappointed that he did not analyze our article devoted to this topic, published in January 2017.³ There is indeed a need to validate these MRI techniques in dialysis patients, notably by comparison with liver biopsy.³ However, liver biopsy is an invasive and risky procedure, especially in frail patients with end-stage renal disease, and such studies therefore raise ethical concerns.³

In a pilot study, on the advice of ethicists, we compared the classic Scheuer score and Deugnier and Turlin histological classification of iron overload (Perls staining of hemosiderin deposits) with signal-intensity-ratio MRI values obtained with the Rennes University algorithm in 11 hemodialysis patients in whom liver biopsy was formally indicated for their medical follow-up.³ For Scheuer’s histological classification, the Wilcoxon matched-pairs test showed no significant difference in the ranking of iron overload by histology and MRI (summary of ranks = 1.5; $P = 1$) (Figure 1).³ The MRI and Scheuer histological classifications were strongly correlated ($\rho = 0.866$, $P = 0.0035$, Spearman coefficient), as were the absolute liver iron concentrations on MRI ($\rho = 0.860$, $P = 0.0013$,

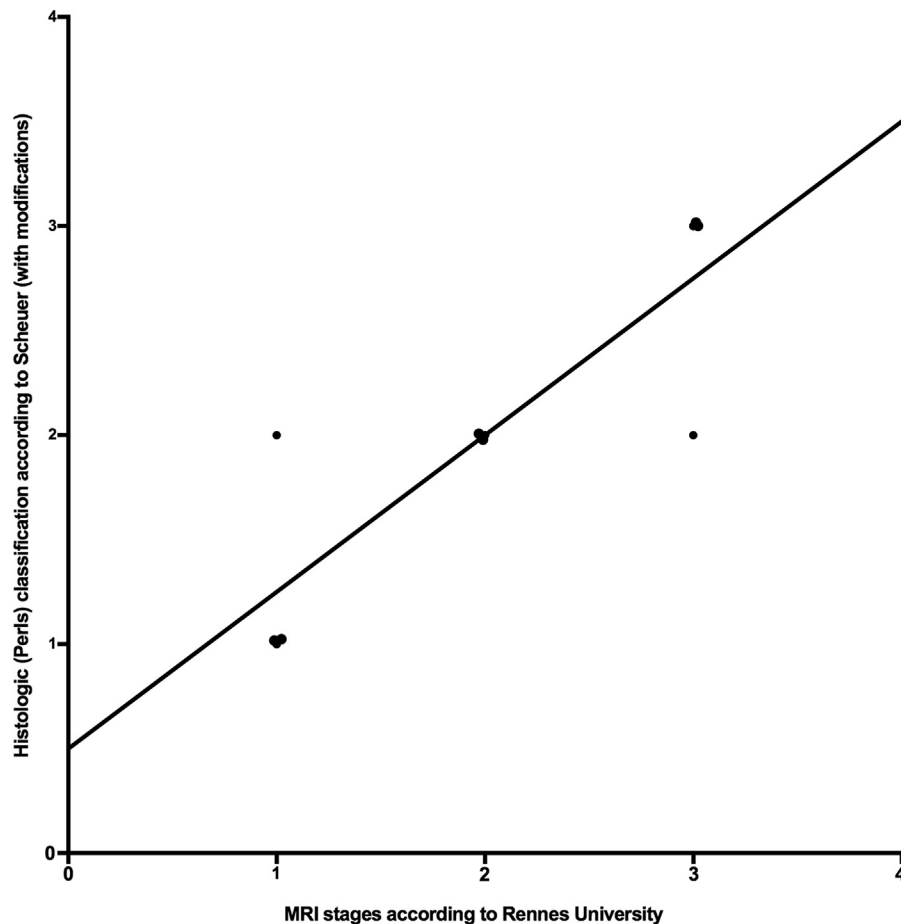


Figure 1. Scatterplot of ranks of the liver magnetic resonance imaging (MRI) and histologic (Perls-Scheuer) classifications in 11 hemodialysis patients. To allow a formal comparison between the MRI scale according to Rennes University (4 categories) and its Perls counterpart according to Scheuer, we combined categories 0 and 1 of the Scheuer classification, which relate to normal liver iron; this category is referred to as category 1. According to Rostoker *et al.*³

Spearman coefficient).³ The absolute liver iron concentrations on MRI also correlated strongly with the Deugnier-Turlin histological score ($\rho = 0.841$, $P = 0.0033$, Spearman coefficient).³ We think these recent findings in the field of dialysis-related iron overload warrant the attention of the broad readership of *Kidney International Reports*.

1. Coyne DW. Iron overload in dialysis patients: rust or bust? *Kidney Int Rep.* 2017;2:995–997.
2. Issad B, Ghali N, Beaudreuil S, et al. Hepatic iron load at magnetic resonance imaging is normal in most patients receiving peritoneal dialysis. *Kidney Int Rep.* 2017;2: 1219–1222.
3. Rostoker G, Laroudie M, Blanc R, et al. Signal-intensity-ratio MRI accurately estimates hepatic iron load in hemodialysis patients. *Heliyon.* 2017;3:e00226.

Guy Rostoker¹, Mireille Griuncelli¹ and Yves Cohen²

¹Division of Nephrology and Dialysis, RAMSAY-Générale de Santé, Hôpital Privé Claude Galien, Quincy-sous-Sénart, France;

and ²Division of Radiology, RAMSAY-Générale de Santé, Hôpital Privé Claude Galien, Quincy-sous-Sénart, France

Correspondence: Guy Rostoker, Collège de Médecine des Hôpitaux de Paris and Division of Nephrology and Dialysis, RAMSAY-Générale de Santé, Hôpital Privé Claude Galien, 91480 Quincy-sous-Sénart, France. E-mail: rostotom@orange.fr

Received 11 October 2017; revised 25 October 2017; accepted 30 October 2017; published online 21 November 2017

Kidney Int Rep (2018) 3, 217–218; <https://doi.org/10.1016/j.ekir.2017.10.018>

© 2017 International Society of Nephrology. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

The Author Replies: Rostoker and colleagues¹ do not contest my conclusion that applying the ratio of magnetic resonance imaging (MRI) estimate of liver iron content (LIC) to total body iron observed in hereditary and transfusional overload overestimates total body iron by a factor of 3 to 6 in dialysis patients.² Unfortunately,

