

**EMBARGOED FOR RELEASE until February 25, 2010 – 5:00 PM (EST)**

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## **DIALYSIS PATIENTS: FATIGUE MAY PREDICT HEART ATTACK**

**Fatigue Could Be 'Bio-Alarm' to Predict Cardiovascular Disease**

**Washington, DC (February 19, 2010)** — For dialysis patients, high scores on a new fatigue rating scale predict an increased risk of heart attack or other cardiovascular events, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society Nephrology* (CJASN).

Fatigue could be an important warning sign of serious cardiovascular events—especially in patients without other obvious risk factors, according to the study led by Hidenori Koyama, MD, PhD, and Yoshiki Nishizawa, MD, PhD (Osaka City University Graduate School of Medicine, Japan). "Our data highlight for the first time the pathophysiological significance of fatigue as an important bio-alarm for cardiovascular disease," Koyama comments.

The researchers evaluated their fatigue questionnaire in a group of 788 dialysis patients. Fatigue is one of the most common symptoms experienced by dialysis patients.

About 16 percent of the dialysis patients had a high fatigue score. At two years' follow-up, patients with high fatigue scores were more than twice as likely to have cardiovascular events such as a heart attack (myocardial infarction) or stroke.

A key feature of the new fatigue questionnaire was that it differentiated fatigue from the many factors associated with it, such as anxiety and depression, pain, overwork, or infection. Fatigue itself was the strongest predictor of cardiovascular risk, even in patients without known risk factors, such as malnutrition, diabetes, and previous cardiovascular disease.

Recent studies have shown that fatigue and other behavioral and psychosocial factors have important links to cardiovascular diseases. However, there is still very limited information on how fatigue affects the risk of cardiovascular disease.

Press Release

"Our research identifies fatigue as an important bio-alarm to predict cardiovascular events in dialysis patients, particularly those who are well-nourished and healthy-looking," according to Koyama. The researchers believe the new questionnaire will be useful in understanding not only fatigue itself, but also the causative factors contributing to it.

They call for further research to determine whether objective measures of fatigue can predict cardiovascular events and to understand the mechanisms underlying this relationship. "Another important question is whether interventions for fatigue will be effective in preventing cardiovascular events," Koyama adds.

Study co-authors include Sanae Fukuda, Tetsuo Shoji, Masaaki Inaba (Osaka City University Graduate School of Medicine), Yoshihiro Tsujimoto, Tsutomu Tabata (Inoue Hospital, Suita), Senji Okuno, Tomoyuki Yamakawa (Shirasagi Hospital, Osaka), Shigeki Okada (Okada Clinic, Osaka), Mikio Okamura (Ohno Memorial Hospital, Osaka), Hirohiko Kuratsune (Kansai University of Welfare Sciences, Kashihara), Hisako Fujii, Yoshinobu Hirayama (Osaka City University Hospital), Yasuyoshi Watanabe, and Yoshiki Nishizawa (Osaka City University Graduate School of Medicine).

Disclosures: The authors reported no financial disclosures.

The article, entitled "Fatigue Is a Predictor for Cardiovascular Outcomes in Patients Undergoing Hemodialysis," will appear online at <http://cjasn.asnjournals.org/> on February 25, 2010, doi 10.2215/CJN.08151109.

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