

The contribution of transthoracic echocardiography in the detection of subclinical cardiac abnormalities in haemodialysis patients

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Abstract

Introduction: Echocardiography is a reproducible non-invasive tool for screening and diagnosing subclinical cardiac dysfunction, vastly used for end-stage renal failure patients treated with haemodialysis.

Aim: The aim of the study was to identify subclinical cardiac anomalies detected by ultrasound, thus determining its place in cardiovascular risk assessment in chronic haemodialysis patients.

Patients and methods: This is a retrospective, cross-sectional, descriptive study, which was carried out in the nephrology department of the RABTA University Hospital in Tunis, including 55 patients undergoing regular intermittent haemodialysis. Sociodemographic variables, history of cardiovascular disease, biological parameters and cardiac ultrasound data were analysed.

Discussion: The study population consisted of 40 men and 15 women (SR: 2.6) of an average age of 53 years. Risk factors most frequently identified: hypertension (76.3%), diabetes (58.2%), underlying heart disease present at the start of haemodialysis (25.4%). Anaemia was found in 78.2% of patients, while secondary hyperparathyroidism was noted in 60%. 1 patient had hypoalbuminemia. The underlying nephropathy was, in order of frequency: diabetic (34%), chronic interstitial tubular (28.6%), indeterminate (11%), chronic glomerular (11%), and hypertensive (8.6%). Only 34 of those patients (62%) underwent two cardiac ultrasounds 1 year apart.

The main lesions identified were: Left ventricular hypertrophy (LVH): 62.8%: 48.6% of patients already had LVH which remained stable afterwards, 14% developed it de novo.

Cavity dilation: de novo atrial (28.6%), ventricular (6%), and atrioventricular (1 patient) dilation. However: two cases of underlying atrial dilations and one underlying ventricular dilation were not found one year after.

Heart valve disorders: 34.3% of dialysis patients in the study had pre-existing valvular insufficiency, and of these, we noted improvement in 50%, stability in 16% and worsening in 33%.

Data collection after a year identified 7 new cases (20%) of valve regurgitation, and 2 new cases (5.7%) of valve narrowing.

Hypokinesia: 13 patients (37%), 8 of which developed the hypokinesia secondarily. Pericardial effusion: 2 cases, with total resorption at 1 year.

Diastolic dysfunction: 5 cases, not found at 1 year.

Conclusion: Although operator-dependent, cardiac ultrasound remains an important tool for detecting subclinical cardiac dysfunction, allowing for early and appropriate care in end-stage renal failure patients treated with intermittent haemodialysis.