

# **معدل انتشار اعتلال القلب والاعوية الدموية لدى المرضى في بداية الاستشفاء الدموي**

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# **Prevalence of Cardiovascular Dysfunctions in Patients Initiating Hemodialysis**

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## List of abbreviations

<b>Abb.</b>	<b>Full Term</b>
cTnI	cardiac troponin I
cTnT	cardiac troponin T
CV	Cardio vascular
CVA	Cerebrovascular accident
CVD	Cardiovascular disease
EBCT	Electron beam computed tomography
EF	Ejection fraction
ESA	Erythropoiesis stimulating agent
ESRD	End stage renal disease
FGF-23	Fibroblast growth factor 23
GDF-15	Growth differentiation factor 15
GFR	Glomerular filtration rate
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HD	Hemodialysis

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HGB	Hemoglobin
HIV	Human immunodeficiency virus
HsCRP	High sensitivity C-reactive protein
HsTnl	High seneitivity troponin I
IL-6	Interleukin 6
IL-10	Interleukin 10
KDOQI	Kidney Disease Outcomes Quality Initiative
<i>List of Abbreviations(cont...)</i>	
LA	Left atrium
LPS	lipopolysacharide
LV	Left ventricle
LVD	Left ventricular dilatation
LVDD	Left ventricular diastolic dysfunction
LVH	Left ventricular hypertrophy
LVMI	Left ventricular Mass index
MDRD	Modification of Diet in Renal Disease
mTOR	mammalian target of rapamycin
Msx2	Msh hoebox 2 gene
NFAT	Nuclear factor of activated T cells

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NHT	Normal hematocrit trial
NP	Nurse practitioner
NT-proBNP	N-terminal prohormone Brain natriuretic peptide
Osterix	Osteoblast specific transcription factor
PE	Pulmonary embolism
PTH	Parathyroid hormone
PTX3	Pentoxin 3
RAAS	Renin-angiotensin-aldosterone system
rHuEpo	Recombinant Human Erythropoietin
RRT	Renal replacement therapy
Runx 2	Runt related transcription factor 2
<i>List of Abbreviations(cont...)</i>	
SCD	Sudden cardiac death
SR – B1	Scavenger receptor class B1
s RAGE	Soluble receptor of advanced glycation end products
Sox 9	Sex determining region Y box 9 gene
SWMA	Segmental wall motion abnormality
TDI	Tissue Doppler imaging
TIBC	Total iron binding capacity

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TLR4	Tall like receptor 4
TSAT	Transferretin saturation
VSMC	Vascular smooth muscle cell

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## **INTRODUCTION**

Chronic kidney disease (CKD) is a worldwide public health problem and cardiovascular mortality is estimated to be at least 10- to 100-fold higher in patients with end stage renal disease (ESRD) than in the age matched general population (*Chan et al., 2011, Herzog et al., 2011*).

Mortality rates among hemodialysis (HD) patients exceed 20% per year and a higher mortality rate within the first year after initiation of HD has been described (*Rognant & Laville, 2014*). The all-cause mortality and mortality due to cardiovascular disease or other causes is found to peak in the second month after dialysis initiation (*Bradbury et al, 2007, USRDS 2013*). In fact, recent studies confirmed highest mortality in the first 2-6 weeks after dialysis initiation (*Chan et al. 2011, Foley et al, 2014*).

Considerable efforts sought to highlight the factors of this early mortality and found that the clinical conditions of patients in the period before

dialysis play a role. In addition, the pattern of CKD care could be an important and modifiable factor, with late referral to a nephrologist and poor management of cardiovascular risk in CKD patients being associated with worse prognosis (*Jungers et al, 2001, Goldstein et al, 2004, Rognant & Laville, 2014, Ishani et al, 2014*).

Patients who initiate chronic dialysis are older, have more co-morbid illness or subclinical damage such as left ventricular hypertrophy and calcifications than a decade prior, and subsequently may experience more hospitalizations in follow-up. Approximately three quarters of incident dialysis patients have increased LV mass, an independent predictor of cardiovascular events and death after onset of ESRD (*Sood et al, 2014*).

In absence of well-organized integrated system for care of pre-dialysis patients, evaluating patients at dialysis initiation may provide an index of degree of care given for these patients and a proxy for identifying high risk patients.

## **AIM OF THE STUDY**

To assess cardiovascular status and clinical characteristics of patients initiating hemodialysis as an index of predialysis care and to identify significant cardiovascular risks in these patients.