# Screening for Cardiovascular Risk Factors in Chronic Kidney Disease

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# Rationale

- Patients with chronic kidney disease (CKD), chronic renal failure (CRF) and end-stage renal disease (ESRD) have high cardio- and cerebrovascular morbidity and mortality

# Screening for Cardiovascular Disease and Risk Factors

*"In patients at risk of chronic kidney disease (CKD), screening for risk factors for cardiovascular disease (CVD) and for coronary artery disease is recommended at baseline and when the patients become symptomatic of renal disease"*

Grade D, Level 4

# Screening for Cardiovascular Disease and Risk Factors

- Traditional CVD risk factors apply to patients with CKD [Ref 118: Van der Zee, et al. 2009.]
- Hypertension: 87 to 90% of all CKD patients
- CVD defined as: IHD, LVH and CCF
- Overall CVD prevalence in CKD population was: 8 to 40% [Ref 119: Levin A. 2003]
- LVH: rise in prevalence at each stage of CKD reaching 75% at dialysis initiation

# Screening for severity of chronic kidney disease (CKD) to determine the cardiovascular disease burden

*"Since the single most important determinant of cardiovascular disease burden is the severity of CKD, screening for the presence and level of renal impairment is recommended"*

*Grade D, Level 4*

# Screening for severity of chronic kidney disease (CKD) to determine the cardiovascular disease burden

- Moderate (CCT 30 – 59 ml/min) to severe (CCT < 30 ml/min) renal insufficiency: Risk factors for (i) Atherothrombotic vascular events, and (ii) CV mortality [Ref 120: Dumaine RL, et al. 2009]
- Essential hypertension (normal renal function) vs CKD patients: latter had more severe LVH in all stages of CKD [Ref 121:Nardi E, et al. 2009]
- Coronary artery disease incidence rise from 48% (Stage I CKD) to 81% (Stage V CKD) [Ref 122: Na KY, et al. 2009]

# CKD screening in primary care setting

- Proteinuria
- GFR

[Ref 123: Vassalotti JA, et al. 2007]

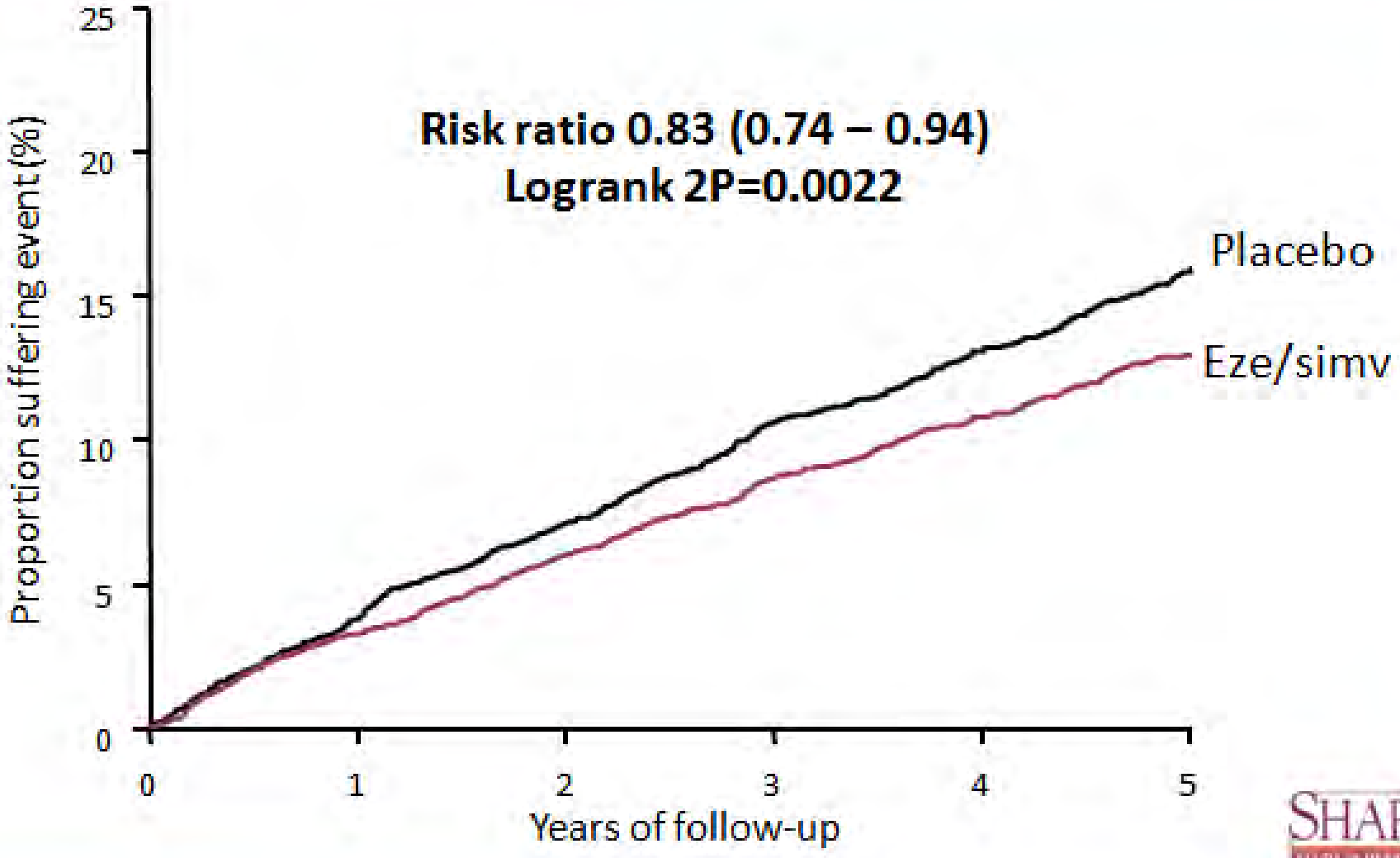
# Clinical Management

- Retarding renal disease progression as a way to reduce CVD burden in CKD patients
- Hyperlipidaemia: screening and treating it in ESRD patients on haemodialysis did not reduce CV mortality, even though the rosuvastatin treated arm had significantly lowerer LDL levels [Ref 126.AURORA study]
- Diabetics on maintenance haemodialysis: lowering LDL significantly failed to reduce CV and cerebrovascular mortality [Ref 127: Wanner C, et al. 2005]

# Clinical Management

- SHARP study (ASN 2010): cholesterol lowering with simvastatin + ezetimibe in CKD patients significantly reduced the risk of major atherosclerotic events by 17%

# SHARP: Major Atherosclerotic Events



# Conclusions

- Patients with CKD have high prevalence of CVD
- Patients at risk of and with CKD should be screened for CV risk factors
- CKD Stage determines the CVD burden hence the importance of retarding renal disease progression
- Lipid lowering in CKD patients was not associated with a favourable effect on CVD in earlier studies; a recent study (ASN 2010) seem to suggest otherwise