

# **Albuminuria in CHF**

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# Albuminuria

- Increased excretion of albumin in urine
- Risk factor for mortality, adverse renal outcomes in patients with diabetes, hypertension and other cardiovascular disease
- Future target treatment for CHF patients?

# Types of Albuminuria

- Normoalbuminuria:  $<8-30\text{mg/dL}$  (dipstick)
- Macroalbuminuria:  $>30\text{mg/dL}$  (dipstick)  
 $>300\text{mg/day}$
- Microalbuminuria:  $30-300\text{mg/day}$

# Albuminuria and CHF

- Candesartan in Heart Failure Assessment of Reduction in Mortality and morbidity (CHARM) substudy (Jackson et al, 2009)
- Follow-up of 2310 patients from CHARM trials
- Prognostic importance of albuminuria in CHF patients

# Albuminuria in CHARM substudy

- 58% had normal albumin in urine
- 30% had microalbuminuria
- 11% had macroalbuminuria

# Significance of Albuminuria in CHARM substudy

- Increased risk of death
- Older patients
- Higher systolic BP
- High prevalence of albuminuria in patients with and without other comorbidities

# Albuminuria as outcome predictor in CHF

- Both micro- and macroalbuminuria showed:
  1. 60-80% adjusted\* increase in the risk of death
  2. 30-70% increase in the adjusted\* risk of admission for heart failure

\*Adjustment was done for variables such as renal failure, diabetes mellitus

# Conclusions from CHARM substudy

- Albuminuria might be important prognostic value for patients with heart failure
- Prospective studies should answer questions whether treatment of albuminuria will improve survival



# Limitations of CHARM substudy

- High number of missing follow-up urine samples
- Selection bias—patients with severe renal dysfunction excluded
- Effect of Candesartan on albuminuria was tested only on subgroup of CHARM patients

# References:

- Damman K, Hillege HL, Van Vandelhuisen DJ, Albuminuria in heart failure: A CHARMing new risk factor? *The Lancet* 2009; **374**:506-507.
- Jackson CE, Solomon SD, Gerstein HC, et al. Albuminuria in chronic heart failure: prevalence and prognostic importance. *The Lancet* 2009; **374**:543-550.