



Update from the Haemodialysis Working Group

The Relationship Between Practice
Patterns and the Survival of
Australasian Haemodialysis Patients



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Aims

- Independent correlates of mortality for haemodialysis patients
 - On HD 90 days after the commencement of renal replacement therapy, and
 - On HD at 3rd Survey (12-17 months after HD inception)
- ANZDATA patients from 1997 – Sept 2002 ($n = 4270$)



Analysis Framework

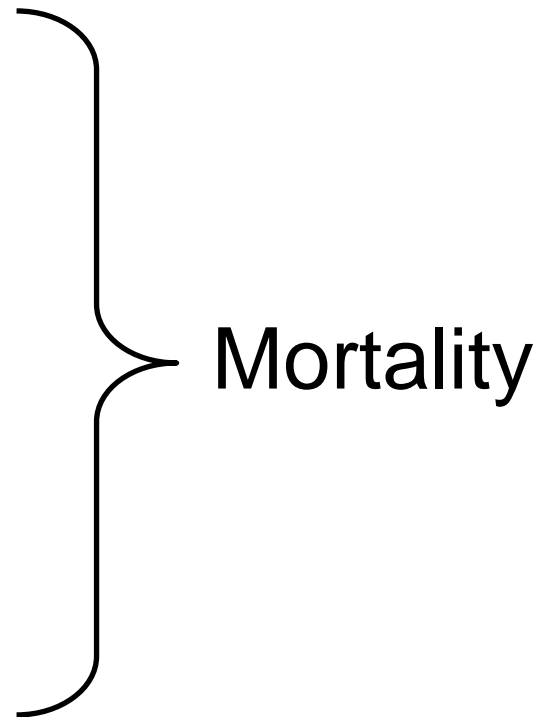
Patient Demographics

+

Patient Comorbidities

+

Practice Patterns





Methods

- Cox regression analyses to generate a multivariate model based on patient demographics and comorbidities
- Comparison of the association of treatment-related covariates upon mortality (QB, HD treatment frequency and duration, URR, haemoglobin, haemodialyser flux and angioaccess) using a proportional hazard model

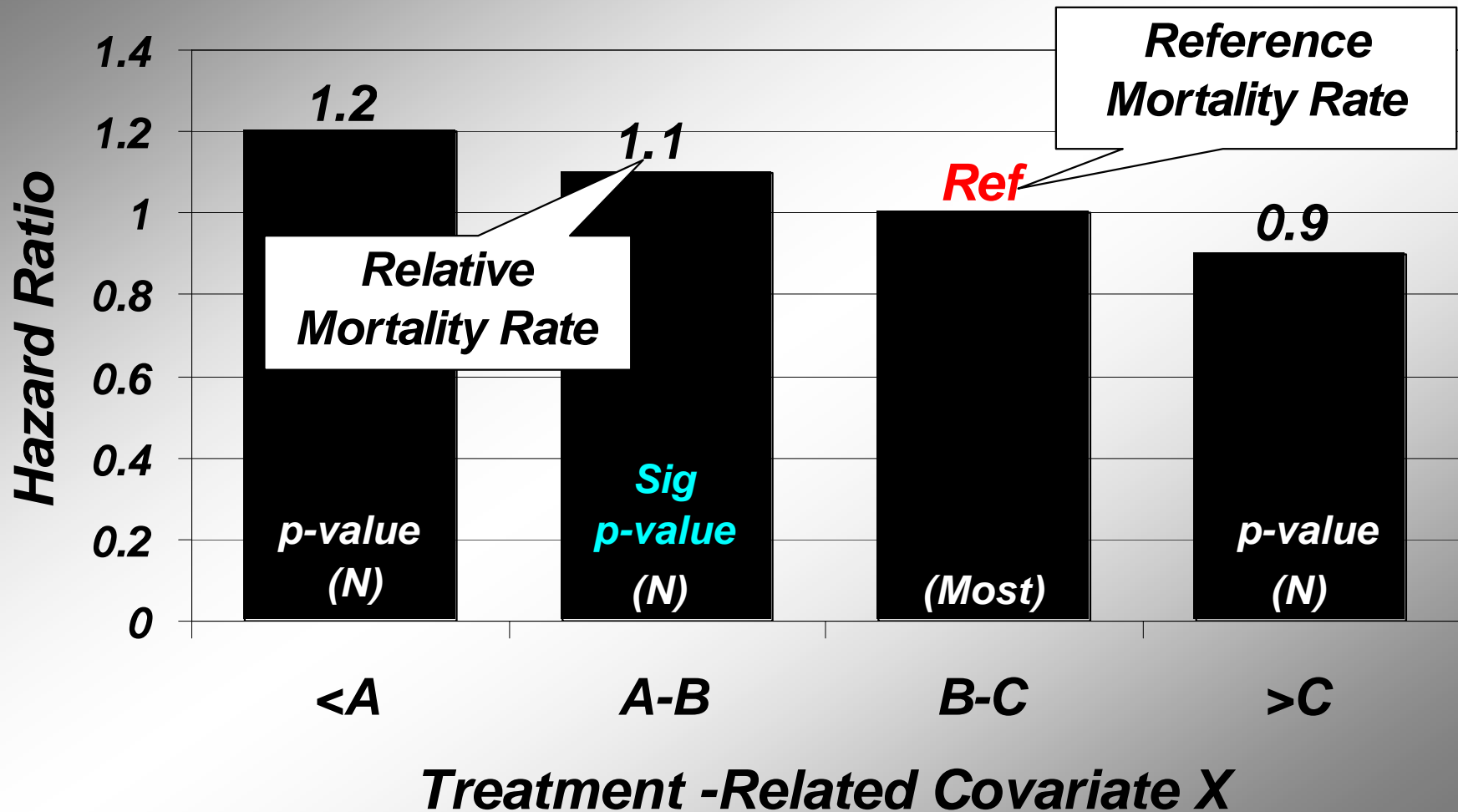
<i>Independent Covariates</i>	<i>Hazard Ratio (95% CI)</i>	<i>Significance</i>
<i>Age</i>	<i>1.04 (1.03, 1.04)</i>	<i><0.001</i>
<i>Race: Asian</i>	<i>0.63 (0.46, 0.86)</i>	<i>0.004</i>
<i>Race: Aboriginal</i>	<i>1.30 (1.03, 1.64)</i>	<i>0.027</i>
<i>BMI: <20</i>	<i>1.36 (1.11, 1.66)</i>	<i>0.003</i>
<i>BMI: 25-29</i>	<i>0.90 (0.77, 1.05)</i>	<i>0.174</i>
<i>BMI: >=30</i>	<i>1.07 (0.90, 1.27)</i>	<i>0.466</i>
<i>Diabetics: Type 1</i>	<i>2.01 (1.39, 2.92)</i>	<i><0.001</i>
<i>Diabetics: Type 2</i>	<i>1.30 (1.13, 1.51)</i>	<i><0.001</i>
<i>Primary renal disease: GN</i>	<i>0.61 (0.52, 0.72)</i>	<i><0.001</i>
<i>Primary renal disease: PCK</i>	<i>0.49 (0.36, 0.69)</i>	<i><0.001</i>
<i>Smoker: Current</i>	<i>1.36 (0.12, 1.67)</i>	<i>0.002</i>
<i>Smoker: Former</i>	<i>1.22 (1.06, 1.40)</i>	<i>0.005</i>
<i>Hypertension: No</i>	<i>1.34 (1.14, 1.58)</i>	<i><0.001</i>
<i>Chronic lung: Yes</i>	<i>1.34 (1.15, 1.55)</i>	<i><0.001</i>
<i>Coronary artery: Yes</i>	<i>1.29 (1.12, 1.47)</i>	<i><0.001</i>
<i>CVD: Yes</i>	<i>1.26 (1.08, 1.46)</i>	<i>0.003</i>



Survival Analyses

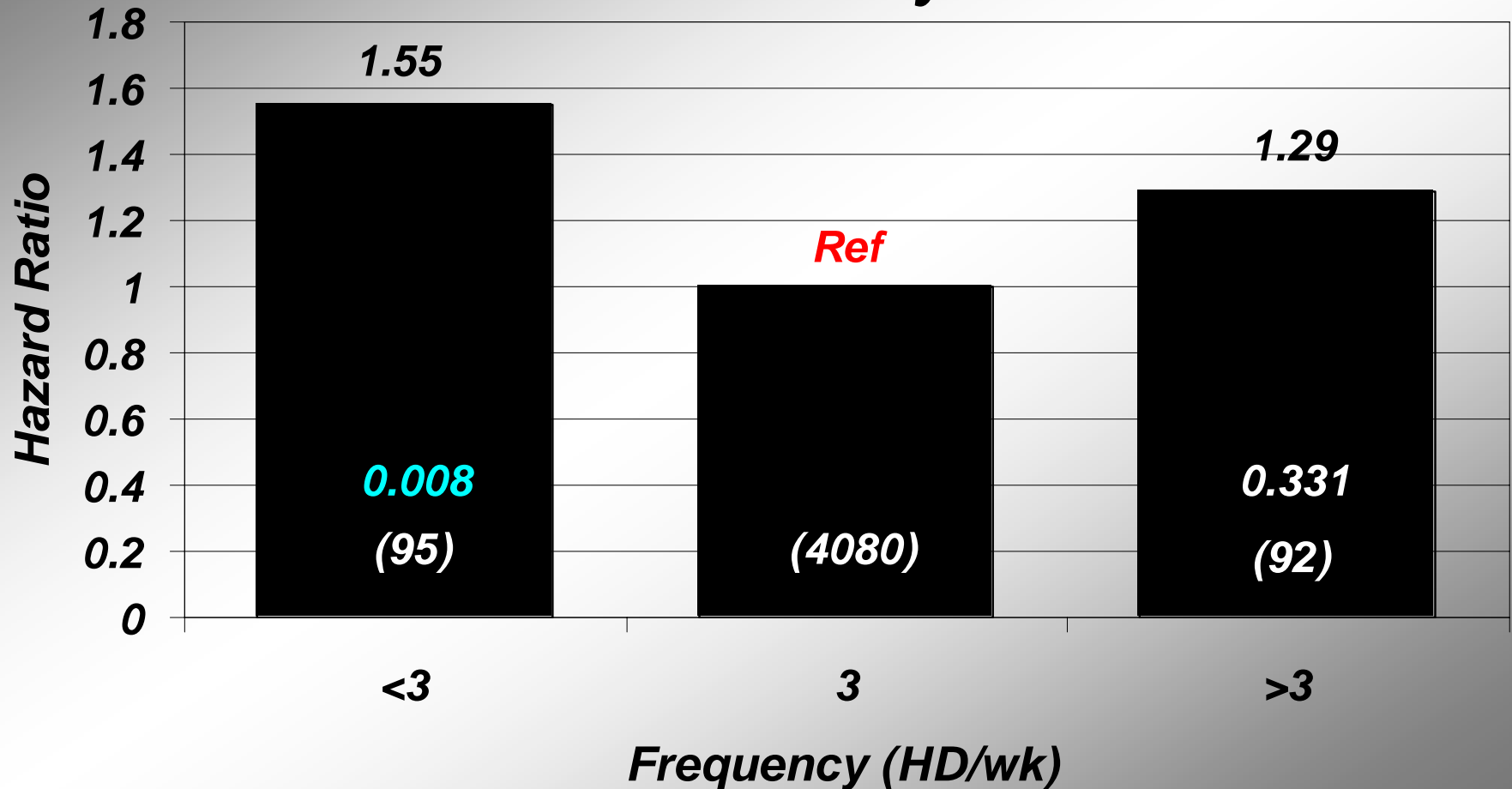
- Treatment-related covariates...

Association of Covariate X and Mortality



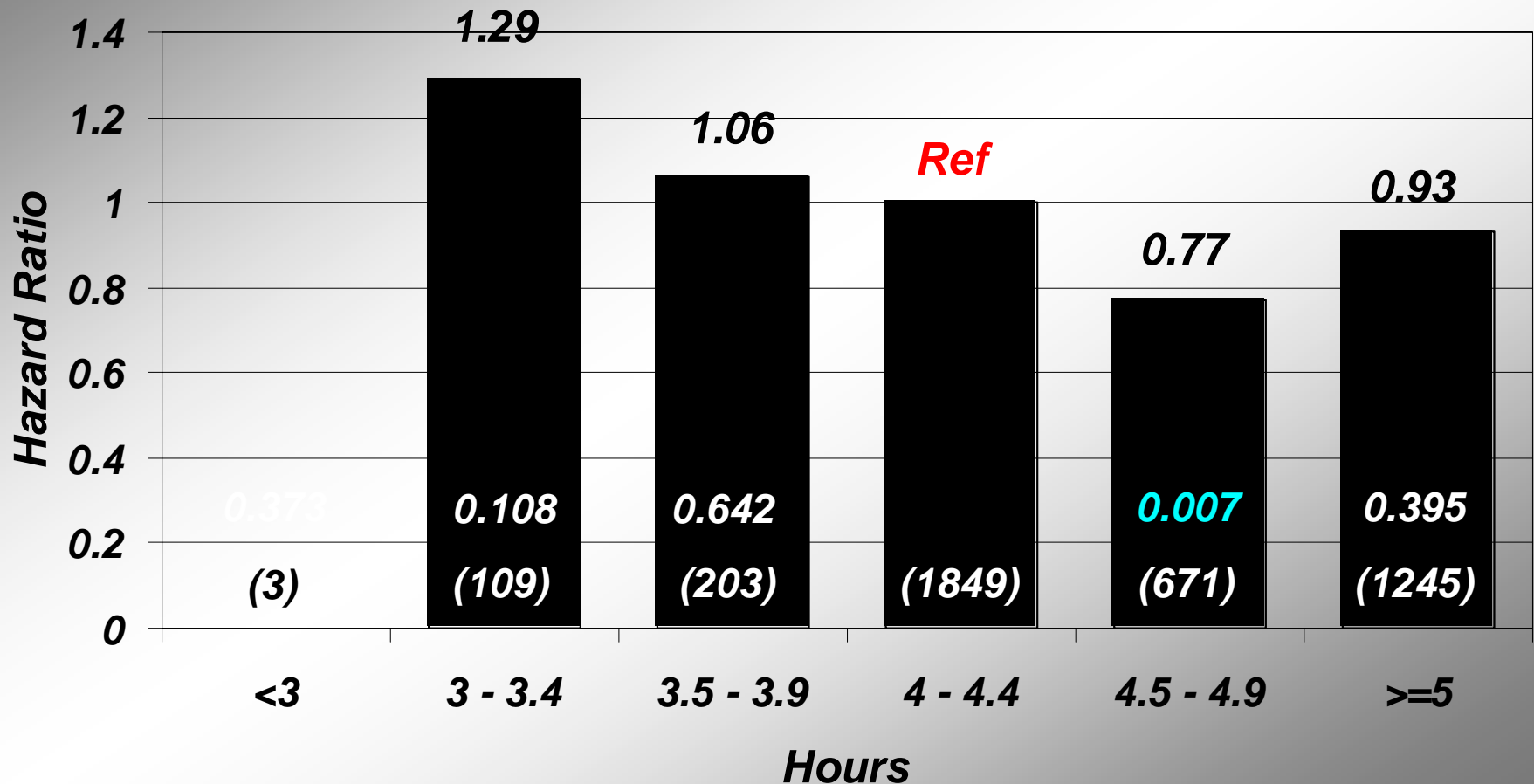
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of HD Treatment Frequency and Mortality



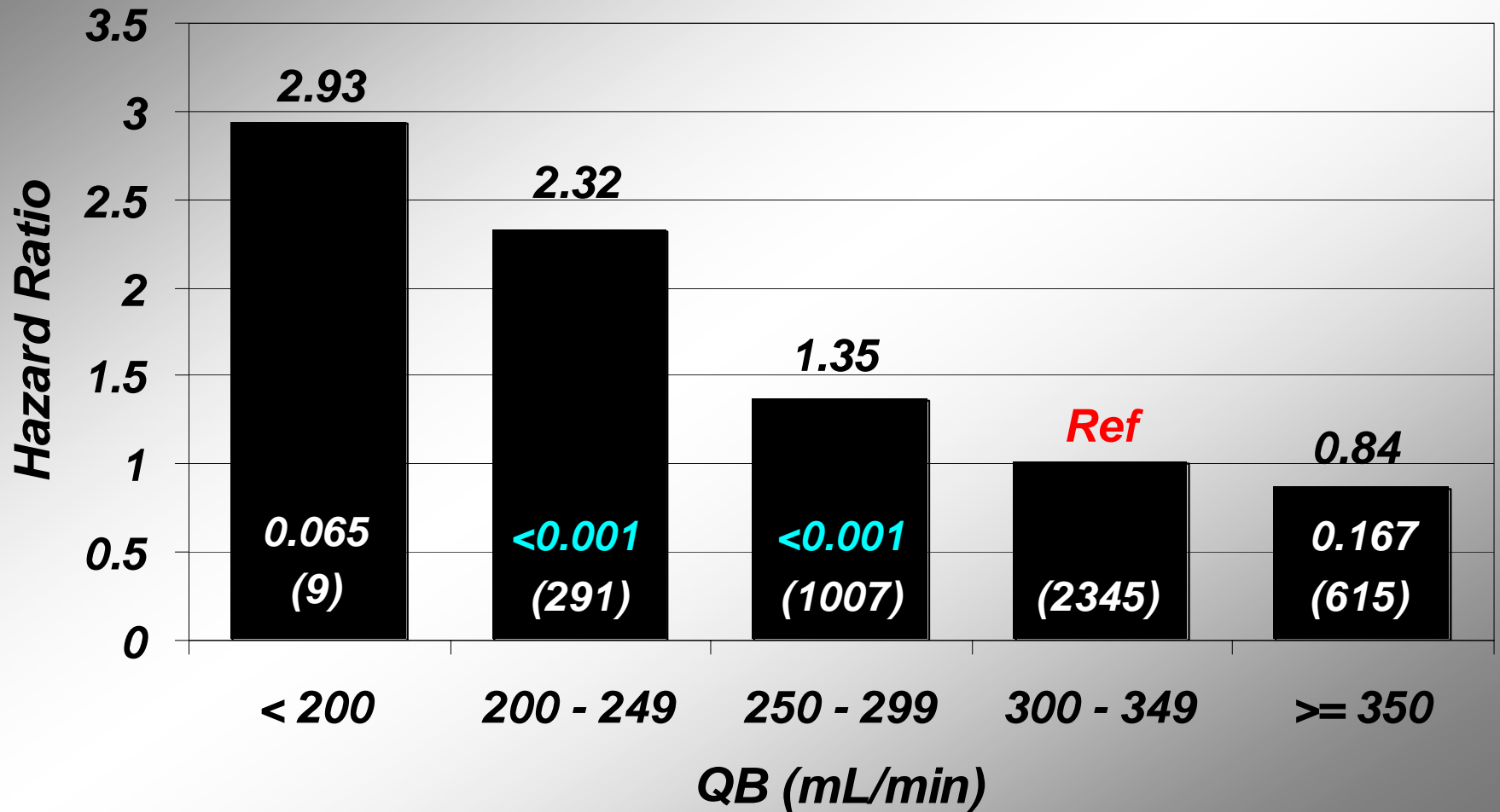
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of HD Treatment Duration and Mortality*



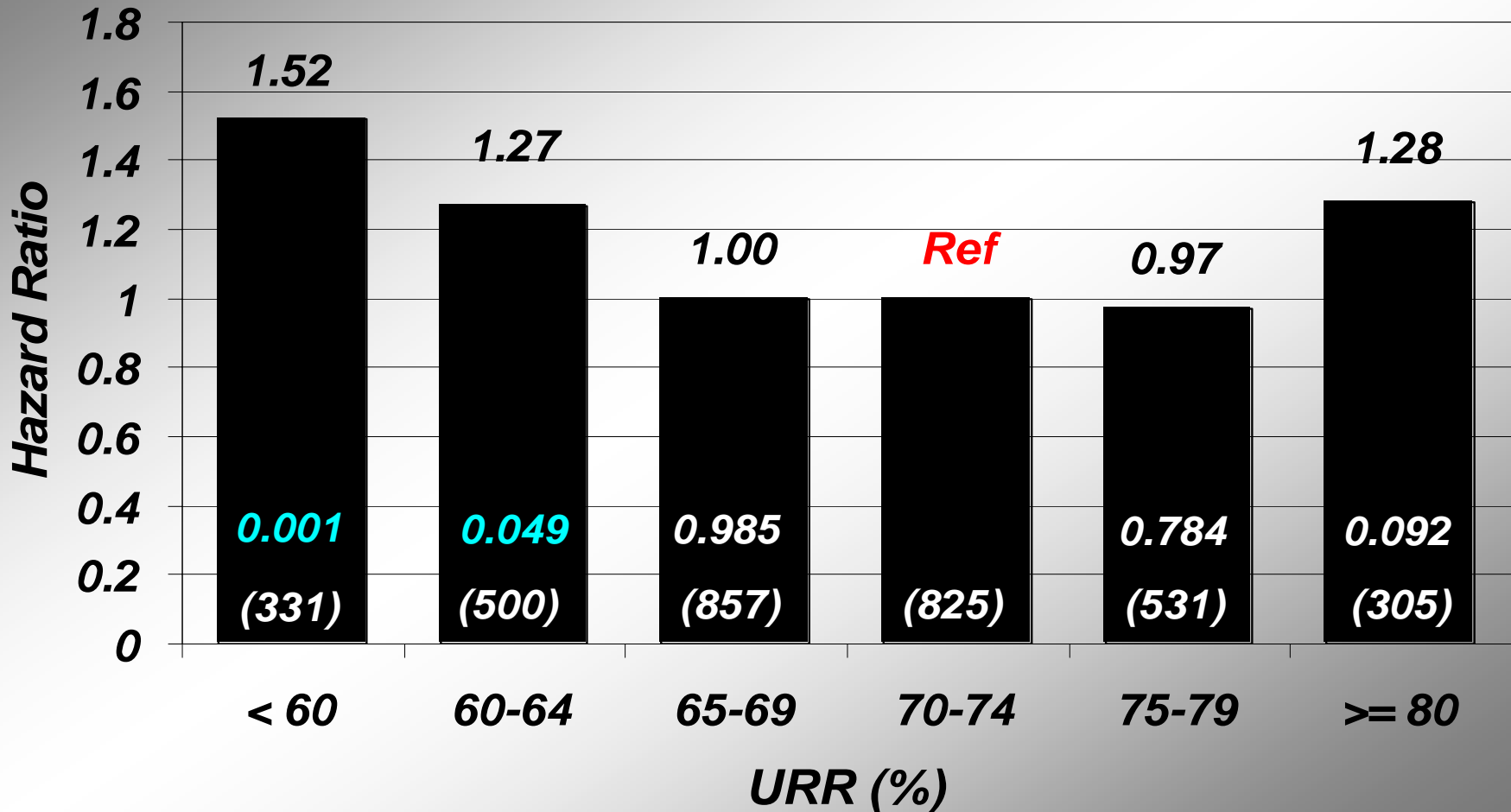
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of QB and Mortality*



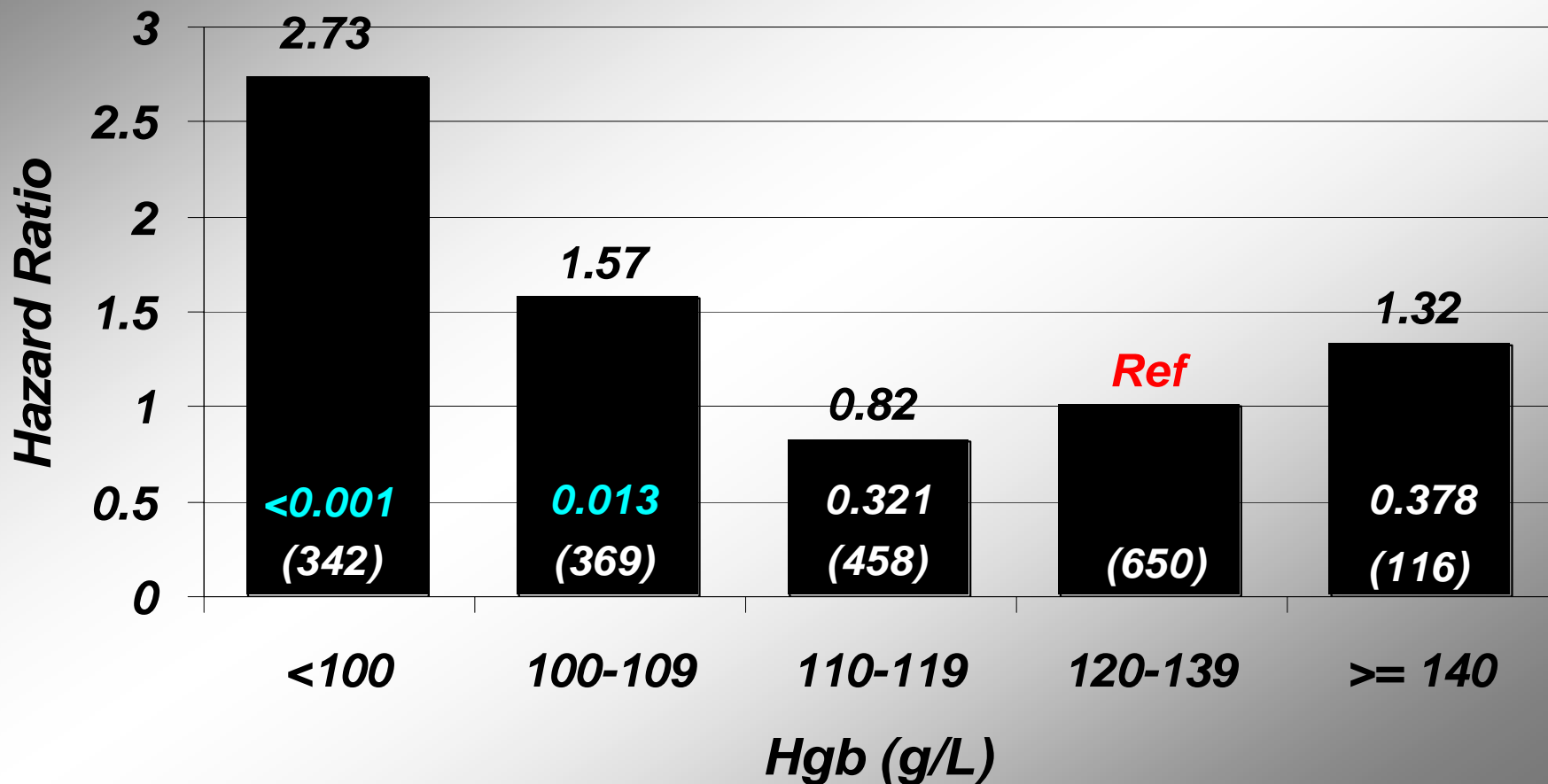
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of URR and Mortality*



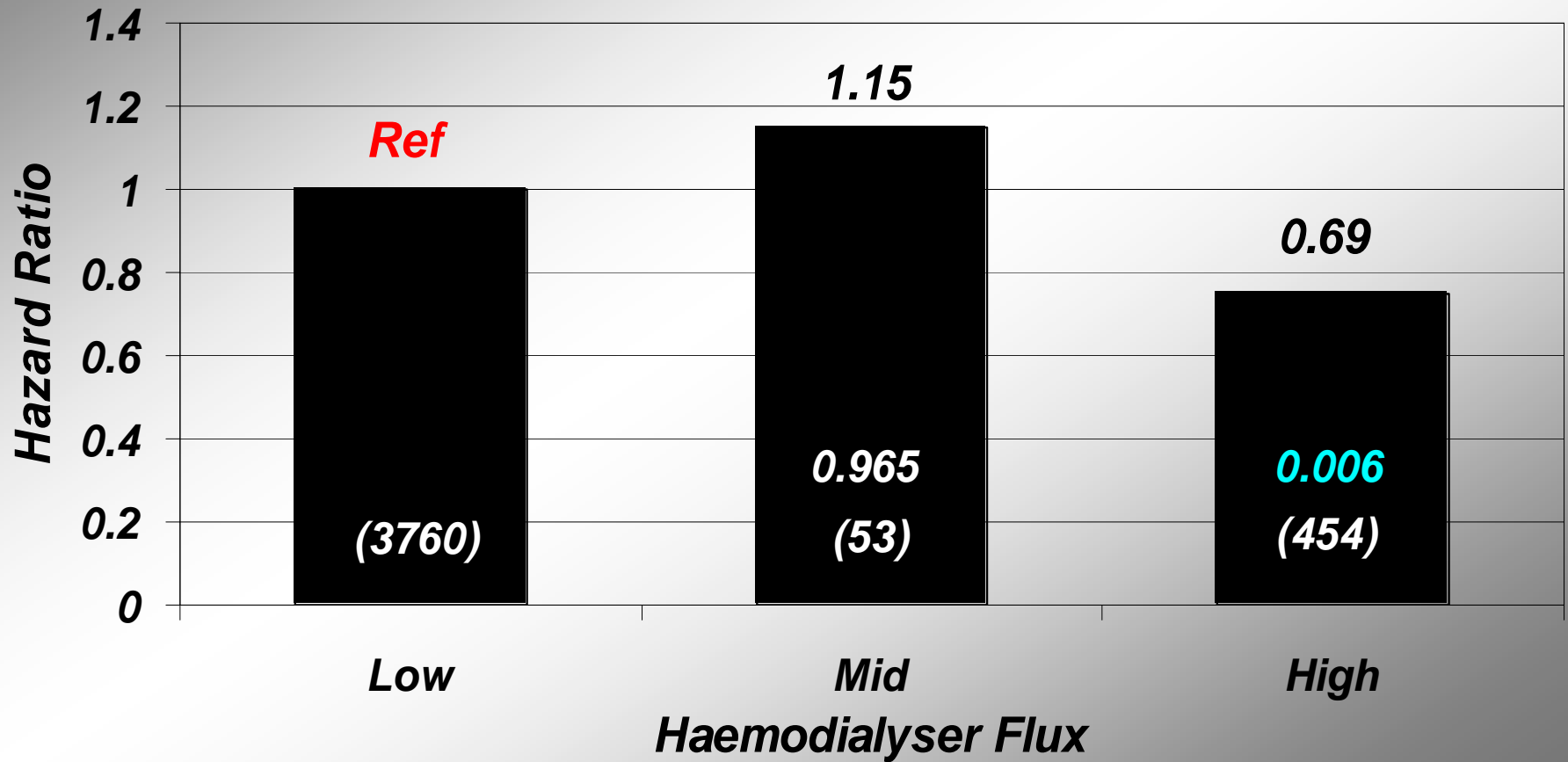
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of Haemoglobin Concentration and Mortality



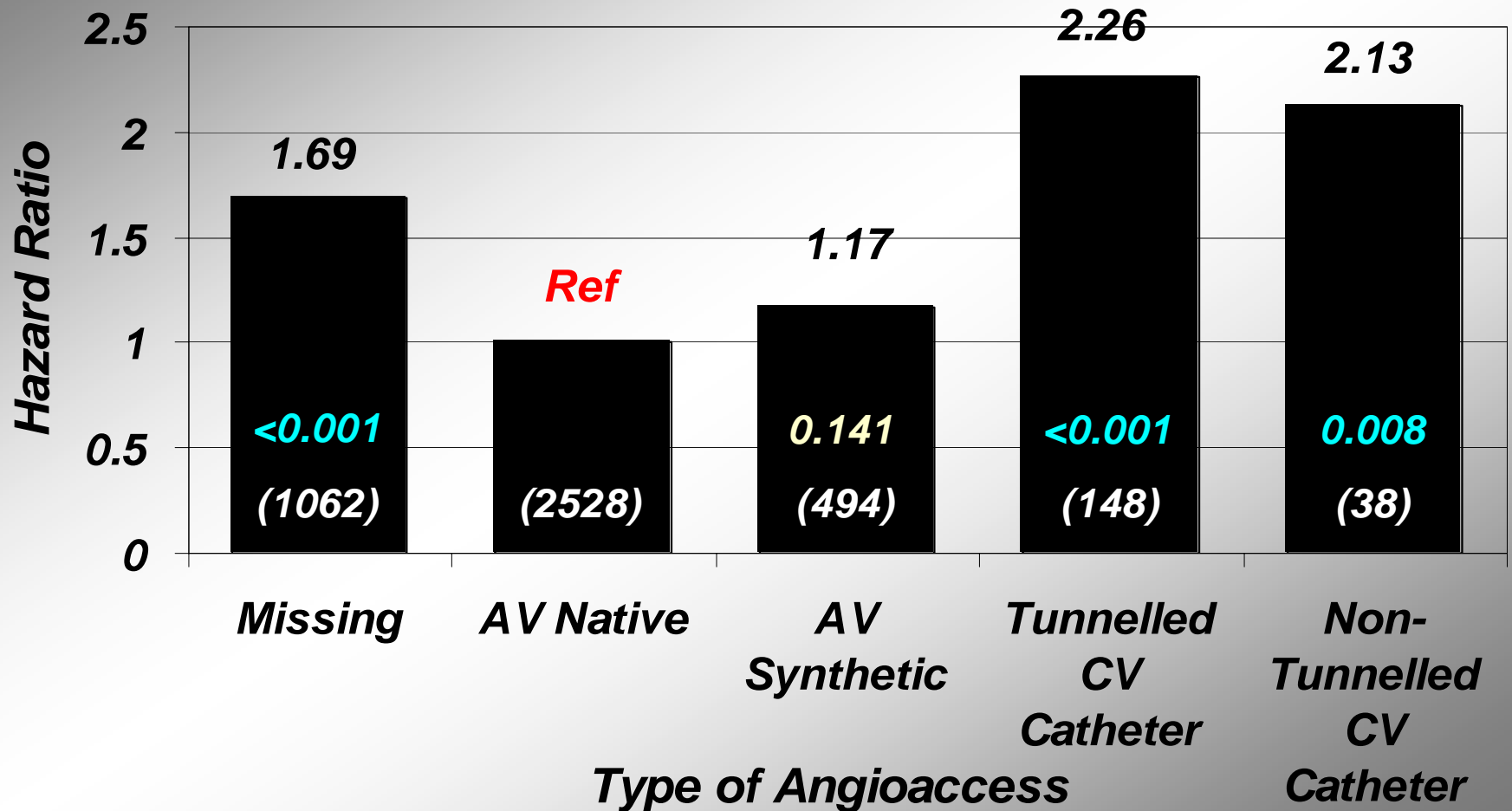
*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of Haemodialyser Flux and Mortality



*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.

Association of Angioaccess and Mortality



*Adjusted for age, race, smoking status, BMI, hypertension, chronic lung disease, coronary artery disease, cerebrovascular disease, diabetes, primary renal disease.



Conclusions

- The majority of Australasian HD patients remain on the “short dialysis schedule”
- In these patients, treatment duration alone is not superior to solute clearance indices as measurement of treatment adequacy
- The recent liberalisation of NZ prescribing regulations for EPO appear well justified
- High flux dialysis and AV native angioaccess are factors associated with reduced mortality