

# Reducing Premature Death and Renal Failure in Australian Aboriginals : A Community-Based Cardiovascular and Renal Protective Program

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## Abstract

**Objective:** To describe results of a systematic treatment program to modify renal and cardiovascular disease in an Aboriginal community whose rates of renal failure and cardiovascular deaths are among the highest in Australia.

**Design:** Longitudinal survey of people during treatment, and comparison of rates of natural death and renal failure with those in a historical control group.

**Setting:** Tiwi Islands (population, about 1800), November 1995 to December 1998.

**Participants:** All adults with blood pressure  $\geq 140/90$ , with diabetes and urinary albumin/creatinine ratio (ACR)  $\geq 3.4$  g/mol (microalbuminuria threshold), or with progressive overt albuminuria (ACR  $\geq 34$  g/mol) were eligible for treatment. The historical control group comprised 229 people who satisfied these criteria in the pretreatment period 1992-1995.

**Interventions:** Perindopril, combined with calcium-channel blockers and diuretics if needed to achieve blood pressure goals; attempts to improve control of blood glucose and lipid levels; health education.

**Main outcome measures:** Blood pressure, ACR, serum creatinine level and glomerular filtration rate (GFR) over two years of treatment; rates of renal failure and natural death compared with control group (analysed on intention-to-treat basis).

**Results:** 258 people enrolled in the program, and 118 had complete data for two years of treatment. In these 118, blood pressures fell significantly, while ACR and GFR stabilised. Rates of the combined endpoints of renal failure and natural death per 100 person-years were 2.9 for the treatment group (95% CI, 1.7-4.6) and 4.8 for the control group (95% CI, 3.3-7.0). After adjustment for baseline ACR category, the relative risk of the treatment group versus the control group for these combined endpoints was 0.47 (95% CI, 0.25-0.86;  $P = 0.013$ ). Treatment benefit was especially marked in people with overt albuminuria or hypertension and in non-diabetic people. The estimates of benefit were supported by a fall in community rates of death and renal failure.

**Conclusions:** Aboriginal people can participate enthusiastically in chronic disease management, with rapid, dramatic improvement in clinical profiles and mortality. Similar programs should be introduced urgently into other Aboriginal communities nationwide.