Prevalence of Atrial Fibrillation in Remote Indigenous and non-Indigenous Populations: A Ten-Year Study in Central Australia

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Background: Although limited data from mainly urban settings exists on the prevalence of atrial fibrillation (AF) among Indigenous Australians, it is not clear if there is a similar prevalence in rural and remote populations.

Methods: Consecutive patients with a diagnosis of AF admitted to Alice Springs Hospital (ASH), the only secondary hospital and provider of specialist cardiac care in the region, were identified over a 10-year period from 2006–2016. Age and gender-standardised prevalence rates, in addition to rate-ratios, for Indigenous and non-Indigenous patients were estimated for AF using Census population data.

Results: Of 57,056 total patients over the study period, 1,210 (46% Indigenous) had a diagnosis of AF. Indigenous patients with AF were younger (mean age 56.6 ± 1.23 years versus 66.1 ± 1.08 years). The Indigenous and non-Indigenous age-standardised AF prevalence rates for males <45 years was 105.5 and 50.3 per 10,000 respectively (ratio = 2.10 [95%CI 1.45–3.04]) and for females < 45 years was 97.9 and 12.4 per 10,000 (ratio = 7.92 [95%CI 4.10–15.32]). In contrast, the Indigenous and non-Indigenous AF prevalence for males >65 years was 1,577 and 2,326 per 10,000 respectively (ratio = 0.68 [0.51–0.90]) and for females >65 was 1,713 and 1,897 per 10,000 respectively (ratio = 0.90 [95% CI 0.71–1.15]).

Conclusions: The prevalence of AF in remote Central Australia is significantly higher in younger Indigenous individuals, and particularly females, supporting trends seen in the urban setting. These data raise the possibility that AF may be in part contributing to the gap in morbidity and mortality experienced by Indigenous Australians in rural and remote settings.

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Surgical & Interventional Management of Rheumatic Valvular Heart Disease at The Prince Charles Hospital from January 2005–December 2017

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Background: The incidence of rheumatic heart disease (RHD) in the indigenous Australian population is the highest in the world. 240 indigenous patients underwent any valve related surgical and interventional procedures at Metro North HHS from January 2005-December 2017. Of these 75 were performed for rheumatic valves at TPCH.

Methods: Chart review and electronic database procedural data was analysed, with clinical follow up records, including echocardiography, being collated to identify survival and cardiac status following these interventions.

Results: Rheumatic interventions were required over an age range of 10–72 years dominantly female 82%. Percutaneous mitral balloon valvuloplasty was performed in 15 patients, transcatheter aortic valve implantation in 1 patient. Surgical valve repair of 11 isolated mitral valves was achieved. Single valve replacement was done in 10 with multiple valve repair/replacements required in the remaining 38 patients. Mechanical and tissue valves were used almost equally during replacement. Valve failure due to mitral valve thrombus formation, aortic prosthetic patient mismatch, and endocarditis required 8 reoperations. One reoperation following mitral valve repair has been required to date. Pre and post procedure LVEF mean of 56% (range 33–80%) and for females <65 was 1,713 and 1,897 per 10,000 respectively. 30-days hospital survival was 100%, 5 year was 88% and 12 year was 84%. Valve function on follow up with clinical and echo data remains satisfactory.

Conclusions: Mitral valve function is durable following valvuloplasty or surgical repair in RHD. Risk to survival during all forms of intervention is low. The type of systemic heart valve utilised for replacement requires close consideration of patient geography, medical access and patient compliance.

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