Heart, Lung and Circulation (2015) **24,** 1126–1133
1443-9506/04/$36.00
http://dx.doi.org/10.1016/j.hlc.2015.04.064

ORIGINAL ARTICLE

A Nurse Practitioner Clinic: A Novel Approach to Supporting Patients Following Heart Valve Surgery

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Received 31 March 2014; received in revised form 28 March 2015; accepted 7 April 2015; online published-ahead-of-print 29 April 2015

Background Valvular heart disease is an important healthcare issue and its impacts are increasing. Following valve surgery, traditional models of care involve medical personnel, however, significant gaps in guideline adherence and delays in follow-up have been reported. Internationally, there is increasing evidence that specialist nurses can function in a variety of clinical settings and improve patient management.

Methods In 2009, a nurse practitioner clinic to support patients following valve surgery was established. We used a retrospective clinical audit and clinical review with descriptive statistics to describe the development of the clinic and to provide guidance for other services for model of care development.

Results Over four years, 462 patients have been reviewed at least once, with over half having multiple assessments, 37% had rheumatic heart disease. These patients were 20 years younger and more likely to be women, non-European, current smokers and have atrial fibrillation. All patients received a focussed lifestyle, rheumatic, thromboembolic and endocarditis risk and symptom review with tailored support, advice and referral where appropriate. Four percent were referred back to a cardiologist for early evidence of valve dysfunction and a further 1.5% required urgent admission for unstable symptoms.

Conclusion The nurse practitioner clinic offers a systematic approach to promoting guideline adherence post valvular surgery. Important clinical symptoms and differences in health needs were identified and were actioned appropriately.

Keywords Nurse practitioner • Valvular heart disease • Nurse led clinics • Ambulatory care • Rheumatic heart disease

Introduction

Valvular heart disease (VHD) can be a consequence of congenital abnormalities, rheumatic heart disease (RHD) or age related degeneration, and significantly impacts on communities worldwide. As the population aged 65 years and above is projected to more than double by 2021 [1], and the number of cases of RHD continue to defy public health initiatives [2], commentators are suggesting VHD will be the next cardiac epidemic [3].

The repair or replacement of a diseased native valve with either mechanical or tissue prosthesis is a lifesaving procedure. However, surgery introduces a small but significant, lifelong exposure to complications such as endocarditis or thromboembolic events and has a social, financial, and psychological impact for many patients [4]. Compared to other common cardiac conditions, the evidence base for the care of VHD is generally limited, particularly following valve replacement or repair [5]. Nevertheless, existing guidelines recommend that patients following valve surgery are reviewed on a regular basis by a cardiologist with a special interest in VHD [4,6]. This is not the case in many countries and in our own centre there is no specific program for patients following valve surgery. A local audit identified

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important deficits in evidence-based practice, particularly affecting patients with RHD [7,8].

Internationally, there is a move towards nurses with specialised knowledge and advanced skills [9] providing outpatient review which devolve some of the functions of a doctor. Nurse clinics have been associated with stricter adherence to guidelines including improved prescribing of preventative pharmacotherapy, more regular follow-up and possibly lower healthcare costs [10]. Nurse clinics tend to offer lengthier discussion about life-style and self-care, alongside symptom review and focussed management [11,12]. The case for nurse clinics is growing but currently lacks the strength of evidence required to drive widespread system change. Despite this, nurses in a variety of settings and across a range of conditions, including following VHD surgery, have developed innovative models of care and report adherence to evidenced-based guidelines [13–16] with associated improved patient outcomes [17–24].

In 2009, following a period of consultation and planning, the cardiology team at Middlemore Hospital, introduced a nurse practitioner (NP) clinic to assess and manage patients following VHD surgery with a particular focus on improving the management of patients with valve disease as a consequence of RHD.

Study Aim

The study's aim was to describe the development of the NP clinic, clinic aims, the population who attend and clinical activity. Due to the high rates of RHD in our community, we also wanted to understand the unique health challenges that patients with RHD face and identify any differences between the patients with RHD and those without.

Method

Clinic Development

The nurse clinic was developed by an experienced NP with knowledge and interest in VHD and experience in acute cardiology care, cardiac rehabilitation and running nurse led clinics [25]. The clinic is supported by senior nurses and cardiologists, who agreed on the aims of the clinic: to ensure timely access to clinical review; to systematically assess for signs and symptoms of valve dysfunction; to assess and implement appropriate lifestyle and pharmacological therapies; and increase patient awareness of self-management strategies to reduce risk of thromboembolism, endocarditis and recurrent rheumatic fever.

To support this new clinical undertaking, a senior cardiologist agreed to provide ongoing supervision and clinical mentorship to the NP and a series of meetings were held to discuss current evidence and develop a clinic protocol based on the European Society of Cardiology VHD Guidelines [4]. Then, following a series of practical learning sessions focussed on consistently identifying the signs and symptoms associated with valvular complications, a formal, credentialling assessment, was completed. Patients following valve repair or replacement expected to require long-term follow-up through the cardiology service were referred to the NP clinic, by their nominated cardiologist. Patients with symptoms of severe heart failure, whose valve was rapidly deteriorating, or whose condition or range of comorbidities would be safer and more effectively managed by a cardiologist, were excluded.

Clinic Process

The clinics run weekly, in a community-based ambulatory care setting, with a 30-minute session allocated to each patient. Each clinic includes a mix of new patients and those requiring follow-up review. Most patients are assessed on an annual or biannual basis but the clinics are flexible enough to allow more frequent reviews for patients with clinical or self-management issues such as difficulty with concordance to anticoagulation therapy. A senior cardiologist runs a clinic alongside the NP and each patient is discussed and reviewed, when clinical issues are identified. After the review a letter is prepared, summarising the clinical findings and outlining any change in therapy or important self-management deficits identified and remedial action taken, for example, referral to the home-based cardiac rehabilitation service. A copy of the clinic letter is sent to the patient, their family doctor and to the referring cardiologist.

Workforce Issues

As increasing pressure is placed on cardiologist-led services to manage a growing population, without a significant growth in resource, a division of labour with specialised nurses managing follow-up assessments has been cited as a solution. Although locally, nurse cardiology clinics have not been well defined, encouraged by overseas literature, an NP role was funded. The NP was tasked to implement the nurse clinic model and also to develop an education and credentialling process, to grow the existing nurse specialist workforce, to support a range of cardiology clinics. An NP was chosen to lead the process as they are recognised expert nurses, incorporating leadership, advanced knowledge, clinical assessment and nursing skills into their practice. Compared to registered nurses, NPs can practice autonomously or as part of a team, have been trained in critical thinking, and have skills in complex decision-making. They promote wellness, prevent disease and manage people's health needs by offering a wide range of assessment and treatment interventions across a range of settings [26]. In New Zealand, currently only NP's have prescribing rights and are the only nurses working in advanced roles, required to have undergone rigorous assessment of their competency by their governing body, the Nursing Council. However, there is no reason that a suitably trained and skilled specialist nurse with advanced assessment skills and effective supervision could not run these well integrated, nurse clinics. Initially, we looked at developing a model within existing cardiac rehabilitation structures but we felt the safest model for patients, and the nurse, was in the outpatient setting with cardiologists on site at all times.