

Chronic arthropathy management in haemophilia: assessing the impact of a new model of care

Healthcare costs are rising and are recognised as being unsustainable at the current rate of expenditure in New Zealand. Cost is a major consideration in the management of haemophilia, a lifelong bleeding disorder, predominantly due to the expensive factor replacement therapy required for patients with severe disease.

The challenge for clinicians managing high-cost chronic conditions such as haemophilia is to show leadership by innovation and a preparedness to do things differently with the aim of achieving the best value for money without compromising quality of care.

With this objective in mind the Auckland DHB Regional Haemophilia Centre introduced a modified multidisciplinary treatment approach for adult patients with severe haemophilia in 2009. It is recognised that more than 85% of all bleeding episodes are within the peripheral musculoskeletal system with the overwhelming majority occurring within knees, ankles and elbows (1). As few as four bleeds into a single joint prior to epiphyseal fusion can mediate an irreversible cycle of joint destruction with long-term haemophilic arthropathy when primary prophylaxis, the current standard of care, is not used (2, 3).

Many of our adult patients were unable to be treated with primary prophylactic factor replacement during their younger years and therefore have significant arthritic joint disease. Most however find it impossible to differentiate between bleeding-associated joint pain and pain secondary to the underlying arthropathy when joint symptoms occur and usually default to managing the symptoms with expensive factor concentrate replacement therapy. This is relatively ineffective if the pain is due to arthritis and therefore inappropriately costly for the healthcare system. The goal of our modified management approach was to optimise the use of factor replacement by ensuring an early correct diagnosis of the precise cause of joint pain and providing the correct intervention.

We selected our highest-user adult patients, including both those receiving 'secondary' prophylaxis and 'on demand' treatment regimens. All patients had a past medical history of recurrent joint bleeds and significant haemophilic arthropathy involving at least one joint.

Updated studies of the factor peak level and half-life were performed to ensure that each dose (based on body weight) and the weekly dosing regimen resulted in an adequate duration of response. Overweight patients were also educated about weight reduction to potentially reduce both the required dose size and the impact of excess weight on their joints. All patients within the cohort were encouraged to report suspected 'bleeds' as soon as they occurred and a rapid assessment pathway introduced enabling immediate or early assessment with the goal being within 24 hours of the symptoms being reported.

Product usage was closely monitored when symptoms were due to an acute bleed but arthritic symptoms were managed aggressively with effective analgesia using the funded Cox-II inhibitor Meloxicam and physiotherapy. A low impact, low resistance exercise-based rehabilitation programme was provided under the supervision of our senior haemophilia physiotherapy practitioner to improve muscle strength, proprioception and biomechanics with a focus on reducing the load on arthritic joints, improving aerobic capacity and emphasising the importance of continued weight control.

An audit of the service was undertaken. The analysis included the 29 highest users of factor VIII/ IX (excluding inhibitor patients) in the wider Auckland region for 2009/10 financial year compared to product orders for the same individuals in the 2010/11 year. In the 2009/10 financial year these 29 patients had total product orders of 5,312,500iu (international units) at a cost of approximately NZ\$1 per unit.

In the following 2010/11 financial year these same patients recorded total product orders of 4,295,000iu, a year-on-year reduction of 19%. Over the same period, data collected independently of this audit revealed that orders for the most commonly used FVIII concentrates (used by 80% of patients in the region) had fallen from an average of 400,000iu/ month to 245,000iu/ month, a 39% reduction consistent with the findings from the audited patient group.

A patient satisfaction audit was developed. Twenty two patients were asked to complete the questionnaire and return it by post. A 68% response rate was achieved. Patients either agreed or strongly agreed to each of the nine question fields which assessed their perception of the knowledge of their condition by the clinical team, interdisciplinary communication within the team, direct access to the specialist nurse or physiotherapy care, a timely response to all patient queries and overall usefulness of the service. Crucially all respondents either agreed or strongly agreed that the service had improved over the preceding 12 months, indicating that they did not perceive the changed model of care to be a purely cost-saving exercise.

In summary, this revised treatment approach resulted in a 19% reduction in year-on-year product orders for the audit population corresponding to an indicative saving in excess of one million dollars. The approach was multifaceted but in essence was directed towards early diagnosis of pain not attributable to a joint bleed and reducing the likelihood that factor concentrate is used inappropriately for a prolonged period for an incorrect indication. This meant a change for patients who had become used to relatively independent home therapy management afforded by the more widespread availability and ease of use of high specific activity recombinant factor concentrates.

The patient satisfaction audit during the same period confirmed patient acceptance and a positive perception of the closer supervision of product use. Cost saving was achieved without compromising patient outcome.

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