



香港風濕病基金會
Hong Kong Arthritis &
Rheumatism Foundation Ltd.

CHARM

CARE, HEALTH, ARTHRITIC MANAGEMENT

issue 1

FEB • 2009

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EDITORIAL

May I greet you with the debut issue of CHARM in the New Year of 2009!

CHARM (Care, Health, Arthritic Management) is an official publication of the Hong Kong Arthritis & Rheumatism that aims to promote an interflow of updated knowledge in the management of patients with rheumatic diseases on a multi-disciplinary basis. Quality management of patients with chronic rheumatic diseases entails efforts from various disciplines including rheumatologist, paediatric rheumatologist, orthopaedic surgeon, rheumatology nurse, physiotherapist and occupational therapist.

Rheumatoid arthritis (RA), a chronic debilitating inflammatory arthritic disease, is the topic of focus in this issue of CHARM. There is an update on the diagnosis and medical treatment of this condition. In the Orthopaedic's column, you can read about new prosthetic joints for established RA patients with chronic joint deformities needing joint replacement. Rheumatology nurse specialists may not be known to many but play an important role in patient care and will be introduced in the Nursing column. Hydrotherapy as a physiotherapy means to improve muscle strength and splintage for arthritic patients, will also be talked about in the Physiotherapy and Occupational therapy sections.

By reading CHARM, I hope we'll learn the updates in patient care other than our own specialty so as to improve our management for these patients with chronic diseases.

RHEUMATOID ARTHRITIS: EARLY DIAGNOSIS AND MANAGEMENT

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Rheumatoid arthritis (RA) is a chronic inflammatory disease characterized by uncontrolled proliferation of synovial tissue. Over time, bone erosion, destruction of cartilage, and complete loss of joint integrity can occur. It is the second most common form of chronic arthritis and affects approximately 1% of population worldwide. Onset of disease usually occurs between 30 and 55 years of age, and women are affected more often than men. Radiographic damage occurs early in RA, and the greatest rate of radiographic progression occurs in the first 2 years of disease.¹ This potential crippling disease has a significant impact on quality of life, with job loss and poor social functioning as well as resultant healthcare costs to the community. 20-30% of untreated persons with RA become permanently work-disabled within three years of diagnosis.² Management of RA has changed considerably within the past decade; recognition that earlier diagnosis and treatment provides superior outcomes, combined with potential biological agents, has focused treatment aims on the induction of disease remission instead of simply controlling symptoms.

Accurate diagnosis of early RA remains a major challenge to rheumatologists. Early RA can be difficult to differentiate from self-limiting or other form of inflammatory arthritis. Most patients in the early stage of disease have no radiographic changes. Ultrasonography and magnetic resonance imaging (MRI) are being investigated as novel imaging techniques to assist the diagnosis of early RA. Ultrasonography has consistently been shown to be more sensitive than clinical examination in detecting small and large joint synovitis.³ The ability of ultrasonography to accurately detect erosions, synovitis and tendon abnormality clearly has potential implications in the early diagnosis and ongoing management of RA. MRI is another modality which is useful in the imaging of soft tissue structures such as synovium and tendons, and when it is used with a contrast agent, synovial inflammation can be demonstrated and differentiated from fat. Furthermore, MRI is able to identify bone edema and erosions at an earlier stage than conventional radiography.⁴ The application of these imaging modalities in clinical services is limited by the availability of expertise and the cost of the imaging, but it is likely that rheumatologists will begin to use and to come across these diagnostic modalities in clinics more commonly.

Rapid control of disease is detrimental for the management of RA and prevention of its related morbidity. Conventional therapy with disease-modifying anti-rheumatic drugs (DMARDs) such as methotrexate, sulphasalazine, hydrochloroquine or leflunomide, are now initiated as soon as possible after a diagnosis of RA is made. Conventional DMARDs are effective in a proportion of patient; however, the onset is slow, taking months to achieve full effect. Also of concern is that monotherapy may not be effective enough in suppressing the synovial inflammation especially in a group of patients with predictors of poor outcomes in the early stage of disease: low functional status early in the disease progression, early involvement of many joints, high ESR or CRP level at disease onset, positive rheumatoid factor, or early appearance of bone erosion in radiograph. A more intensive treatment strategy including combination DMARDs therapy such as methotrexate and sulphasalazine in conjunction with corticosteroid in a step-down protocol have been confirmed to be superior to monotherapy.⁵ The benefits of step-down combination and corticosteroid therapy over monotherapy have been further confirmed by other studies.⁶⁻⁷ The step down therapeutic approach uses intensive therapy early, with the aim of achieving disease control, followed by less intensive maintenance therapy. The key to this approach has been the recognition of the “window opportunity,” the critical stage of early disease when patients are most responsive to treatment and have the most potential for lifelong benefit.

All patients not responding satisfactorily to conventional DMARDs, particularly those who are progressing rapidly despite the therapy, should be considered for more aggressive treatment. The development of genetically engineered biologic agents that selectively block cytokines (anti-cytokines therapy) in the short term represents a major advance in the treatment of RA. The most clinically effective anti-cytokine agents studied to date are antagonists to TNF α , an essential mediator of the cytokine inflammatory cascade in RA. Three anti-TNF α agents are available in Hong Kong: etanercept, a recombinant soluble TNF-Fc fusion protein; infliximab, a chimeric (mouse-human) anti-TNF monoclonal antibody; and adalimumab, a fully humanized anti-TNF monoclonal antibody. Infliximab is administered intravenously while both etanercept and adalimumab are given subcutaneously. The results of randomized controlled studies showed that anti-TNF α agents used either in combination with methotrexate or as monotherapy, have a more rapid clinical response than methotrexate alone in early disease.⁸⁻¹⁰ Two meta-analyses compare the response percentages of the three anti-TNF α agents using data of published randomized controlled trials and showed no difference in effectiveness.¹¹⁻¹² There is concern of the increased risk of serious infections and malignancy by blocking TNF- α which also has a role in fighting infection and in the regulation of tumor cells. In a recent meta-analysis of TNF-blocking drugs (infliximab or adalimumab) in patients with RA, the threat of serious infection was 3.6%, in contrast with 1.6% in controls (risk ratio of 2.01).¹³ Rates of opportunistic infections such as tuberculosis are higher, and patients need to be screened for previous exposure before the use of TNF-blocking drugs is considered. Regular surveillance such as chest radiograph monitoring is required to look for early infection. Although meta-analysis has shown an increase in skin cancers, the rate of occurrence of solid tumours was not increased compared with the general population.¹³ However, patients with RA, particularly those with severe disease, are at increased risk of both malignancy and infection, regardless of therapy.¹⁴ The absolute risk:benefit ratio is unknown and needs to be studied further. The cost of the TNF α blocking drugs is probably another main limiting factor: they are substantially more expensive than traditional DMARDs. The clinical criteria for qualification of the etanercept and infliximab for Samaritan Fund assistance in Hospital Authority has been established since April 2007 and more patients will benefit from the treatment by anti-TNF α agents. The prognosis of high-risk patients who are likely to respond to treatment would change the cost-benefit balance substantially. Furthermore, newer biologic agents are being investigated and will hopefully result in even better outcomes of patients.

References

- van der Heijde DM, van Leeuwen MA, van Riel PL, et al. Radiographic progression on radiographs of hands and feet during the first 3 years of rheumatoid arthritis measured according to Sharp's method (van der Heijde modification). *J Rheumatol* 1995;22:1792-1796.
- Sokka T. Work disability in early rheumatoid arthritis. *Clin Exp Rheum* 2003;21(5 suppl 31):S71-4
- Hoving JL, Buchbinder R, Hall S, et al. A comparison of magnetic resonance imaging, sonography, and radiography of the hand in patients with early rheumatoid arthritis. *J Rheumatol* 2004;31:663-675.
- McGonagle D, Conaghan PG, O'Connor P, et al. The relationship between synovitis and bone changes in early untreated rheumatoid arthritis: a controlled magnetic resonance imaging study. *Arthritis Rheum* 1999;42:1706-1711.
- Mottonen TP, Hannonen P, Korpela m, et al. FINnish Rheumatoid Arthritis Combination therapy. Delay to institution of therapy and induction of remission using single-drug or combination-disease-modifying antirheumatic drug therapy in early rheumatoid arthritis. *Arthritis Rheum* 2002;46:894-898.
- Grigor C, Capell H, Stirling A, et al. Effect of a treatment strategy of tight control for rheumatoid arthritis (the TICORA study): a single-blind randomized controlled trial. *Lancet* 2004;364:263-269.
- Darmawan J, Rasker JJ, Nuralim H. Ten-year radiographic outcome in patients with rheumatoid factor positive rheumatoid arthritis treated with aggressive immunosuppressive combination therapy. *J Rheumatol* 2004; 69:66-69.
- Smolen JS, Han C, BalaM, vander Heijde D, et al. Patients with early rheumatoid arthritis achieved a clinically meaningful and sustained improvement in physical function after treatment with infliximab. *Ann Rheum Dis* 2005;64:S418
- Bathon JM, Martin RW, Fleischmann RM, Tesser JR, et al. A comparison of etanercept and methotrexate in patients with early rheumatoid arthritis. *N Engl J Med* 2000;343:1586-1593.
- Breedveld FC, Weisman MH, Kavanaugh AF, Cohen SB, et al. The PREMIER study: A multicenter, randomized, double-blind clinical trial of combination therapy with adalimumab plus methotrexate versus methotrexate alone or adalimumab alone in patients with early, aggressive rheumatoid arthritis who has not had previous methotrexate treatment. *Arthritis Rheum* 2006;54:26-37.
- Hochberg MC, Tracy JK, Hawkins-Holt M, Flores RA. Comparison of the efficacy of the tumor necrosis factor alpha blocking agents adalimumab, etanercept, and infliximab when added to methotrexate in patients with active rheumatoid arthritis. *Ann Rheum Dis* 2003;62(S2):13-16.
- Nixon RM, Bansback N, Brennan A. Using mixed treatment comparisons and meta-regression to perform indirect comparisons to estimate the efficacy of biologic treatments in rheumatoid arthritis. *Stat Med* 2007;26:1237-54.
- Bongartz T, Sutton AJ, Sweeting MJ, Buchan I, Matteson RD, Montori: Anti-TNF antibody therapy in rheumatoid arthritis and the risk of serious infection and malignancies: systematic review and meta-analysis of rare harmful effects in randomized controlled trials. *JAMA* 2006; 295:2275-2285.
- Wolfe F, Mitchell DM, Sibley JT, Fires JF, Bloch DA, Williams CA, et al. The mortality of rheumatoid arthritis. *Arthritis Rheum* 1994;37:481-494.

THE ROLE OF A RHEUMATOLOGY NURSE SPECIALIST

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Rheumatic diseases often run a chronic and unpredictable clinical course. These diseases may cause significant physical disability and can also negatively influence the quality of life and other psychosocial aspects including self-esteem, self-image, social activities and roles, and coping mechanisms of the sufferers. Despite advancement in medical technology, treatment may be associated with side effects and there is often no cure. Although it is not always possible for rheumatic patients to regain health, treatment strategies target at better control symptoms and prevent further destruction of joints and other organs in the body (Jawad, 1996; Le Gallez, 1998; Sheepy, 2000). As maintenance of quality of life is another essential goal in the management of patients with rheumatic diseases, it is important and essential to identify, address the psychosocial and emotional aspects of patients and to understand needs of individual patient (Le Gallez, 1998; Ryan, 1998).

It is well known that nurse has a unique position to assist an individual, sick or well, to perform activities that contribute to health or its recovery. Rheumatology nursing is comprised of educated professionals who serve as patients' counselors, educators and advocates and are responsible to deliver the best nursing care in the safest way. Besides nurturing nursing skills, in-depth and breadth knowledge is necessary in providing a high quality service. Over the past decade, there is a significant advance in the treatment and management of rheumatic diseases, including the use of biologic agents. At the same time, the need for rheumatology nurse increases (Carter, 2008). Reviewing the development of rheumatology nursing, it evolves over many years continuously. Due to lacking of a formal network for sharing and acquiring knowledge and skills, its progress remained unappreciated until the early 1980s. The Rheumatology Forum (RF) was established with the support of the Royal College of Nursing (RCN). An inaugural meeting of the RCN RF was held in 1981. It was a milestone because it acknowledged rheumatology nursing as a specialty with its own right (Hill, 2006). The growth of nurse-led clinics is one of the most significant innovations in nursing care. These clinics are usually the domain of clinical nurse specialists. In United Kingdom, nurse-led clinics were well established in a number of areas of chronic diseases. It emerged in rheumatology in 1980's. The first clinics concentrated on clinical drug trials. Nurses monitored the disease progress and provided education and support to both patients and their families. In the following years, nurse-led care had grown continuously. Outcomes studies also proved that nurse-led care was practical and cost-effective. Clinical nurse specialists provided services that empowered patients to maintain quality of life at lower cost. Similarly, by providing nurse-led services expands and strengthens the roles of rheumatology nurse (Brownsell and Hennell, 2003; Grundy, Lamb, Lawrence and Moots, 2003; Hennell and Brownsell, 2003; van den Hout, Tjihuis, Hazes, Breedveld and Vliet Vlieland, 2003; Ryan, Farrell, Lewis and Hassell, 2003; Wong, Mok, Chan and Tsang, 2005).

Countries all over the world, including Hong Kong search for a cost-effective health care system. In this new health care management era, qualified nurses are fostered to claim ownership of professional judgement and autonomy. Nurse specialists, a group of nurses confirmed under the health care reform, was established in 1994 with the advent of Hospital Authority. It aimed to retain expert clinical nurses and achieve cost-effective nursing work redesign initiatives (Wong, 1998).

Rheumatology nurse has a unique position and is a key team player in facilitating patient care in the multidisciplinary team. Because the process involved is a challenging task in order to help stabilizing rheumatic condition and maintaining optimal health of rheumatic patients. Being an expert practitioner, rheumatology nurse requires specialized knowledge and skills, understanding and expertise to support, guide, educate and empower this group of patients. At the same time, educative role puts the rheumatology nurse in an advantageous position to bridge the theory-practice gap for health professionals. In the in-patient setting, rheumatology nurse may also have a role in providing knowledge and clinical skills to nurses in the medical wards and to supervise them in the management of patients with rheumatic diseases, for instance, administration of biologic agents that are recently introduced in the treatment of patients with inflammatory arthritis. Patient education could also empower professionals to care patients with complicated conditions and their families.

In some health care settings, the rheumatology nurse will also be engaged in consultation initiated by other medical professionals. Consultation is the process of providing expert advice and liaison to patient and their carers including medical and allied health staff. This may be in the form of guidance, information, knowledge, expertise or solution. The aims of these consultations are to improve skills of others in handling current conditions, empower them and enhance their capability to solve similar situations in the future. To be a consultant, the rheumatology nurse should make use of her specialized knowledge, diagnostic ability, problem-solving and communication skills in handling various situations (Albarran and Whittle, 1997; Puetz and Shinn, 1997; Armstrong, 1999).

To improve quality of nursing practice and patient care, research is another feature of the role. Research findings would also provide more information and knowledge that help formulate further clinical decision. Evidence-based practice has become increasingly important. Rheumatology nurse has been proactively involved in clinical research (Armstrong, 1999; Hamric, Spross and Hanson, 2000; Oermann and Floyd, 2002). The nurse specialist may initiate hypothesis and conduct activities that help to develop nursing theory and knowledge. As a direct care provider, the rheumatology nurse has the advantage of linking research findings and patient care (Armstrong, 1999; Hamric et al., 2000). Dissemination of research findings among health care providers is also important. It provides opportunities for them to develop confidence and knowledge and aware the issue of quality assurance. Improvement in current practice can enhance patient outcome and provide better patient care. Besides, using research findings as basis to develop clinical care protocols may help standardize nursing practice (Armstrong, 1999).

Cultural attributes and characteristics appear to be related to performance. However, little is known about the process involved. Although leaders cannot manipulate the culture, they can initiate, influence and shape the direction when it emerges. To improve the care provided and bring about sustained cultural changes, nursing needs effective leaders in clinical arena. As a forerunner, rheumatology nurse who adopts the role of leadership is in a unique position to promote new ideas and innovative measures, review and evaluate current practices regarding to local situations (Armstrong, 1999; Ibbotson, 1999; Hamric et al., 2000; Manley, 2000; Ryan, 2001).

Since no single discipline provides all the necessary care for patients, the rheumatology nurse works closely with other professionals such as physiotherapist, occupational therapist and dietitian (Le Gallez, 1998; Madigan and FitzGerald, 1999). Assessing patients and participating in rheumatology round regularly allow the rheumatology nurse to realize patients' problems in different points of view. The nurse specialist may coordinate service and resources from different specialties.

Nursing care for rheumatic patients not only focuses on management of the acute exacerbated condition, but also provides a framework for promoting health and empowering patients to manage their diseases and activities of daily living. A rheumatology nurse is a pivotal person with specialised knowledge and skills, and adopts the roles of direct care provider, educator, nurse consultant, researcher, leadership and coordinator in daily practice. The role of the nurse specialist is highly valued by patients, families, health care professionals and educators. It is expected that the rheumatology nurse would enhance professional development of nursing in rheumatology.

THE ROLE OF A RHEUMATOLOGY NURSE SPECIALIST

References

- Albaran, J. W. & Whittle, C. (1997). An analysis of professional, specialist and advanced nursing practice in critical care. *Nurse Education Today*, 17, 72-79.
- Armstrong, P. (1999). The role of the clinical nurse specialist. *Nursing Standard*, 13(16), 40-42.
- Brownell, C. & Hennell, S. L. (2003). Evaluation of specialist nurse SOS clinic. *Rheumatology*, 42(suppl: British Society for Rheumatology XX Annual General Meeting. A joint meeting with the Societe Francaise de Rheumatologie, 1-4 April 2003, Manchester, UK), 149.
- Carter, S. C. (2008). Highlights of the rheumatology nurses society inaugural annual conference. Retrieved December 9, 2008, from <http://www.medscape.com/viewarticle/579121>
- Grundy, G., Lamb, J., Lawrence, M. & Moots, R. (2003). In house accreditation implementation and evaluation of a nurse led intra-articular joint injection service. *Rheumatology*, 42(suppl 1: British Society for Rheumatology XX Annual General Meeting. A joint meeting with the Societe Francaise de Rheumatologie, 1-4 April 2003, Manchester, UK), 148-149.
- Hamric, A. B., Spross, J. A. & Hanson, C. M. (2000). *Advanced nursing practice an integrative approach* (2nd ed.). Philadelphia: W. B. Saunders Company.
- Hennell, S. L. & Brownell, C. (2003). Setting up a young adult clinic for patients with rheumatic diseases. *Rheumatology*, 42(suppl: British Society for Rheumatology XX Annual General Meeting. A joint meeting with the Societe Francaise de Rheumatologie, 1-4 April 2003, Manchester, UK), 150.
- Hill, J. (Ed.). (2006). *Rheumatology nursing: a creative approach* (2nd ed.). Chichester: John Wiley & Sons Ltd.
- Ibbotson, K. (1999). The role of the clinical nurse specialist: a study. *Nursing Standard*, 14(9), 35-38.
- Jawad, A. S. M. (1996). *Rheumatoid Arthritis: a Patient's Guide*. London: Martin Dunitz Ltd.
- Le Gallez, P. (Ed.). (1998). *Rheumatology for nurses: patient care*. London: Whurr Publishers Ltd.
- Madigan, A. & FitzGerald, O. (1999). Multidisciplinary patient care in rheumatoid arthritis: evolving concepts in nursing practice. *Baillière's Clinical Rheumatology*, 13(4), 661-674.
- Manley, K. (2000). Organizational cultural and consultant nurse outcomes: part 1 organizational culture. *Nursing Standard*, 14(36), 34-38.
- Oermann, M. H. & Floyd, J. A. (2002). Outcomes research: an essential component of the advanced practice nurse role. *Clinical Nurse Specialist*, 16(3), 140-144.
- Puetz, B. & Shinn, L. J. (1997). *The nurses consultant's handbook*. New York: Springer Publishing Company, Inc.
- Ryan, S. (1998). The essence of rheumatology nursing. *Nursing Standard*, 13(13-15), 52-54.
- Ryan, S. (2001). Consultant nurses in rheumatology: releasing the potential! *Rheumatology*, 40, 1325-1327.
- Ryan, S., Farrell, A., Lewis, M. & Hassell, A. (2003). Expert nurse-conducted drug monitor clinics for patients with rheumatoid arthritis: added value? *Rheumatology*, 42(suppl 1: British Society for Rheumatology XX Annual General Meeting. A joint meeting with the Societe Francaise de Rheumatologie, 1-4 April 2003, Manchester, UK), 155.
- Sheepy, M. (2000). Preventive care. *Nursing Standard*, 15(12), 61.
- van den Hout, W. B., Tjhuis, G. J., Hazes, J. M. W., Breedveld, F. C. & Vliet Vlieland, T. P. M. (2003). Cost effectiveness and cost utility analysis of multidisciplinary care in patients with rheumatoid arthritis: a randomized comparison of clinical nurse specialist care, inpatient team care, and day patient team care. *Annals of the Rheumatic Diseases*, 62, 308-315.
- Wong, F. K. Y. (1998). Health care reform and the transformation of nursing in Hong Kong. *Journal of Advanced Nursing*, 28(3), 473-482.
- Wong, F. K. Y., Mok, M. P. H., Chan, T. & Tsang, M. W. (2005). Nurse follow-up of patients with diabetes: randomized controlled trial. *Journal of Advanced Nursing*, 50(4), 391-402.

SPLINTING FOR ARTHRITIC HANDS

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Joint deformities and contracture are common problems that impair daily functions of people with arthritis. They are complications of the inflammatory arthritic disease itself which may affect the upper and the lower extremities. Pain and swelling over the joints are the common manifestations during the inflammatory stage, with joint deformities and contracture when the disease becomes chronic. Performance of activities in daily living are limited especially when the finger joints are deformed and painful with weakened and unstable grips, and the clients' self esteem badly spoiled when their hands are far from normal looking cosmetically.

Apart from medical treatment given to control the underlying inflammatory disease, splintage serves to relieve pain, prevent further joint deformities and to facilitate functions in daily activities. Splints can be dynamic, facilitating motion of the targeted joints at gentle and safe assistive force; or static, providing a rigid position of function and prevent joint deformity. As a conservative management, splints are tailor-made to individual finger(s) or joint(s), accommodating different shapes and contours of different fingers. Various types of materials can be used for fabrication. Thermoplastic materials are the commonest materials used for its best conforming characteristic and rigidity in reversing deformity when in use, and preventing further deterioration. Fabrics, metallic wires or rings are also used to enhance flexibility and efficiency in functional performance while maintaining the splinted hand in most favorable positions at work. Better cosmesis is another consideration in the choice of materials. In order to cater for different demands of people, we try to understand their life roles before making choice of the materials. For instance, we usually choose thermoplastic materials for night resting splints as a rigid measure to prevent further deformity while we may recommend a beautiful ring splints for those who prioritize cosmesis at work.

Splintage also plays an important role in protecting newly operated joints or tendons after reconstructive surgeries. Either dynamic or static splints can enhance the effectiveness of the surgical procedures. While dynamic components of the splints can facilitate early motion in protected ranges to minimize such complications as tendon adhesion and joint stiffening, application of a static protective splint at night help position and rest the operated joints and soft tissues at their most advantageous position for tissue healing. Careful physical examination and understanding of individuals' different life roles and work demands are the major steps before our prescription. By regular assessments on clients' progress, we monitor the effectiveness of the splinting program and carry out refinement, adjustment, and renewal accordingly. The design of splinting program is tailor-made to different individuals with different conditions. It aims at enriching people with better performance in their activities of daily living, better outlook and their quality of life as the utmost objectives.



HYDROTHERAPY - THE LEGEND OF ITS PROMISING EFFECT FOR ARTHRITIS

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Whatever we name it hydrotherapy, aquatic exercise or water exercise, it provides a very comfortable yet effective and safe medium – WATER for those in need to perform the vital element in physical rehabilitation – EXERCISE.

Hydrotherapy formerly called hydropathy which involves the use of water for soothing pains and treating diseases. Hippocrates also prescribed bathing in spring water for various kind of sickness.

The use of water to treat rheumatic diseases has a long history. Today, hydrotherapy is widely used in treating musculoskeletal disorders such as rheumatoid arthritis, ankylosing spondylitis, osteoarthritis... and even in clients who suffer from neuro-musculoskeletal disorders.

Given the physical properties of water – buoyancy, hydrostatic pressure and turbulence, physiotherapist can introduce different variety of exercise to achieve specific training aims. With introducing such special medium, most arthritis clients can achieve much more compare to exercise on land. The cushion effect of water can also lower the chance of injury during exercise.

Mobilizing, strengthening, stretching, aerobic or endurance purpose can all be served in one program and one medium. For clients suffered from severe joint pain or muscle spasm, the magic of WARM water is irresistible. Together with the messaging effect from movement of the body or the designed spa jet, it relaxes both tightened muscles and stiff joints, and to certain extent, even the stressful mind.

Nowadays, with introducing Tai Chi element in water and the use of “Noodle” – a floating tubing, many forms of movement can be performed more easily and comfortably. A popular Tai Chi in water program in Japan – Ai Chi was also been introduced to Hong Kong and was applied in rehabilitation two years ago. The nineteen forms of movement in water which aim at relaxation, trunk and hip mobilization as well as for balance improvement. This is especially recommended for clients with ankylosing spondylitis for Ai Chi movement encourage the client to mobilize the spine actively. Secondly, the requirement of posture awareness and concentration in breathing may lead to deep relaxation and clam down of the tightened soft tissue, as a result, pain due to overstress and muscle tightening can be better controlled. For noodles’ exercise, clients can complete the whole set of assisted and resisted exercise by using just one and simple equipment. And that’s why it becomes one of the most favorite water equipment for water fitness instructors and therapists.

Functional training is another important training element. Exercise such as semi-squat, brisk walking, running, alternate stepping and balancing exercise will all be introduced selectively as an integral part of the program. The ultimate aim of all these exercises is to help the patient get back to live and exercise with confidence and function to their limit as soon as possible.

Exercise compliance is one of the most challenging problems faced by all therapists in exercise training. However, it is interesting to observe that the exercise compliance in water is always better than land exercise program. Problems of lack of suitable facilities, long traveling to the pool, struggle a lot and even need helps to get changing in the toilet would not keep patients away from enjoying the practice.

Having work with arthritis patients for more than ten years, I am very glad to see that once they enter the water exercise program, most of them will keep on with the exercise for life time. As a health care professional, we do have the responsibility to take precaution on medical conditions like cardio-respiratory complications, skin disorders or for patients receiving long term steroids to ensure safe and effective delivery of exercise program.

Following the growing demand of this modality of therapy, I am quite sure you can find the largest number of rheumatic arthritis patients at one time at the pool and not just at the clinics!

JUVENILE IDIOPATHIC ARTHRITIS

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Introduction

- Juvenile Idiopathic Arthritis (JIA) is the most common form of chronic rheumatic disease in children. There is wide variation in the epidemiological studies of JIA in different countries. It is estimated that the overall prevalence of JIA is from 0.07 to 4.01 per 1000 children.
- Persistently active disease is associated with poor outcome and long term disability. Thus, the current management of JIA is to diagnose early, treat early and be aggressive in treatment earlier in order to limit permanent disability.

Diagnosis

- Juvenile Idiopathic Arthritis (JIA) is defined as presence of arthritis (swelling or effusion, limitation of range of motion, tenderness or pain on motion, and increased heat) in one or more joints. The age at onset is less than 16 years old.
- The duration of arthritis lasts for 6 weeks or longer and other causes of arthritis (e.g. septic arthritis, malignancy) are excluded.
- According to the ILAR Classification, there are seven subtypes with different clinical features and prognosis

Treatment

A. Multi-disciplinary Approach

- ◆ A coordinated multi-disciplinary team care consisting of paediatric rheumatologist, nurse specialist, social worker, physical therapist, occupational therapist, orthopaedic surgeon and clinical psychologist is the key to success of management of JIA.
- ◆ Uveitis is an important extra-articular complication in children with JIA. Children with JIA should have regular slit-lamp screening by ophthalmologist.
- ◆ The aims of treatment are to preserve cartilage, control pain and preserve range of motion, muscle strength and function; to manage systemic complications; to facilitate normal nutrition, growth, and physical and psychological development.

B. Medical Therapy

- ◆ Non-steroidal Anti-inflammatory Medications (NSAIDs)
- ◆ Disease Modifying Anti-Rheumatic Medications (DMARDs)
 - Methotrexate (MTX)
Methotrexate remains remission-inducing agent of first choice for persistent and active arthritis.
Most paediatric rheumatologists will initiate methotrexate therapy early in the disease course
 - Other DMARDs:
 - Sulphasalazine
 - Leflunomide
 - Cyclosporine
 - Thalidomide
- ◆ Intra-articular Corticosteroid Injection
 - Intra-articular corticosteroid is a safe and effective treatment in managing synovial inflammation in a child with oligoarticular arthritis.
- ◆ Biologic Agents
 - It has been shown that tumour necrosis factor and other cytokines like interleukin 1 and interleukin 6 are important mediators of joint and synovial inflammation. Targeted monoclonal antibody therapies have been developed recently. e.g. etanercept, infliximab and tocilizumab

Conclusion

- ◆ There are many promising developments in the understanding and improved treatment options in JIA.
- ◆ In order to prevent long term disability, earlier and more aggressive therapy is advised for those with persistent arthritis.
- ◆ A multidisciplinary team approach is very important in management of JIA.

JOINT REPLACEMENT SURGERY - WHERE ARE WE?

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Total joint replacement refers to the insertion of artificial components to replace the damaged surfaces of a joint, so as to relieve pain and to improve function. The components are made of medical grade metal, plastic (ultra-high-molecular-weight polyethylene or PE), sometimes ceramics, and bone cement is used for fixation of some components. As a joint consists of two or more surfaces, there are usually two or more components for each replaced joint. In Hong Kong, total knee replacement is the commonest (around 1000 cases each year), followed by total hip replacement (about 500 cases) each year. Total elbow and shoulder replacement are much less common, and are mostly done for rheumatoid arthritis.

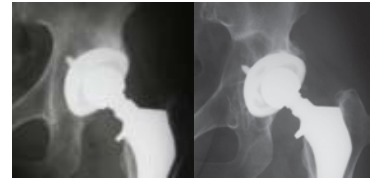


Total hip replacements started in early 1960's with the introduction of bone cement in the fixation of the hip prosthesis, and the use of ultra-high-molecular-weight polyethylene (PE) as the bearing surface that articulated with a metal femoral hip ball. In the 1970's and 1980's, the common failure mode of total hip replacement was mechanical failure. It was wrongly attributed to the use of cement.



JOINT REPLACEMENT SURGERY - WHERE ARE WE?

This led to improvements in the cementing techniques and the use of cementless hip prostheses. The latter have special surfaces (porous coated surface or hydroxyapatite coated surface) that permit patient's own bone to grow on them (bone ingrowth or biological fixation). Total hip prostheses fixed with improve cementing techniques or with cementless fixation have much lower mechanical failure rates, with less than 10 percents would need a revision surgery in 10 years time. In the 1990's, the common mode of failure was PE wear and bone loss due to osteolysis induced by the wear debris.



Scientists and surgeons find ways to improve the material properties of the PE, and to explore the possibility of using alternative bearing surfaces such as metal-on-metal or ceramic-on-ceramic articulations. Other advances in total hip replacement include the use of minimal invasive surgery, computer navigation and robotic surgery.



Total knee replacements started a bit later than total hip replacements. Likewise, PE was used as the bearing surface and cement was used for the fixation. Initially there were no instruments and the surgeons did the bone cuts according to their "eye-balling" and experiences. Later, instruments were developed to help most surgeons to achieve reasonably accurate bone cuts.

In the past 30 to 40 years, there have been substantial improvements in the design of the total knee prosthesis and the quality of the materials used. The modern total knee prostheses are closer in their form and function to the normal knee. Unlike the total hip replacements, most surgeons still use cement for fixation and use PE as the articulating surface. The recent advances include the use of computer navigation, minimal invasive surgery and robotic surgery.



In Asian countries, many surgeons prefer designs that will lead to very good knee flexion. The ways to control the pain after the surgery have also shown significant improvements.

Replacement of the elbow and shoulder joints can provide very good pain relief, but the functional gain may not be as much as total hip and knee replacements. One explanation is the patients usually come late for elbow and shoulder problems. Patients with hip and knee problems usually come sooner, because it is difficult for them to walk. The patients usually wait until the last moment for upper limb arthritis. The soft tissues around the shoulder and elbow are usually very contracted or attenuated, and thus motion and strength of the replaced joint may be suboptimal. If the soft tissue conditions are favourable, total shoulder and elbow replacements are also compatible with very good functional outcomes.

So, where are we? We are now quite confident that we can offer significant help to our patients, old or young, active or inactive, if their joints are affected by diseases and all other treatment modalities have been tried and failed. No doubt total joint replacements do have complications. The most important ones are deep wound infection, neurovascular injury, fractures and instability of the replaced joints. Although the nature of the operation is classified as an ultramajor one, it can usually be safely performed even in the octogenarians. I usually tell my patients that there may be problems in about 5%, and the total joint replacement will be successful in 95%. The definition of success is pain relief, improved function and no early complication.

Nearly all the patients and their relatives ask about the longevity of total joint replacement. Is it alright to replace a joint in young patients? Are you not worried about failures in 10 years time? First, the chance for a replaced joint to fail and need another revision is only 10 percent or so after 10 years. Yes, the risk is higher for younger patients because they use the replaced joints more, but majority of them do not need revision surgery after 10 years! Second, revision surgery is not the end of the world. With advances in technology and surgical techniques, revision surgery can produce results comparable to the first time surgery, and multiple revisions are highly probable. Third, we are using materials that are more durable, surgical techniques that are more consistent and accurate, and thus we expect the results should be better than what we achieved with materials and techniques in the past. Fourth, for rheumatoid arthritis patients, they may be young but they may not use their replaced joints that much. It is because their activity levels will be limited by multiple joint problems. Fifth, imagine a patient who is only 35-year old, and he suffers from intractable hip pain due to arthritis. How long should he wait until he is "old" enough for a total hip replacement? If it is 2 years then it is not worth waiting, because he will still be very young then. If it is 20 years, maybe the total hip replacement can last much longer when he turns 55-year old – patient will be less active, materials and techniques may further improve. However, the price to pay is from 35 to 55-year old, he may quit his job, stop all his hobbies, rely on wheelchair, need to take strong pain killers that are not without side effects. He has no quality of life when he waits to be older and more suitable for a total hip replacement. Nowadays, young age is not a major concern, and definitely not a contra-indication for joint replacement surgery.

TITLE: PREVALENCE OF CORONARY ARTERY DISEASE IN PATIENTS WITH SYSTEMIC SCLEROSIS

Principal investigator: Dr. Mo-yin Mok, Queen Mary Hospital

Background: Patients with systemic sclerosis are characterised by microvascular abnormalities. Macrovascular disease has previously been less frequently examined in these patients.

Objective: To examine cardiovascular risk for patients with systemic sclerosis

Methodology: Consecutive patients with systemic sclerosis were recruited from University affiliated rheumatology clinic. CT scan of coronary artery was examined for calcium score.

Result: Fifty-three (50 female and 3 male) patients with systemic sclerosis were recruited. The mean±standard deviation of age of these patients was 53.1±12.9 years. Twenty-one (39.6%) patients were found to have identifiable atherosclerotic plaque. Four (7.5%) had low whereas another 4 (7.5%) patients had very high moderate cardiovascular risk. Ca Score were found to correlate with age and duration of disease from first onset of symptoms. Patients who has higher risk of cardiovascular disease were found to possess serum anti-centromere antibody (p=0.002), anti-Scl70 antibody (p=0.002), has limited scleroderma (p=0.04), pulmonary hypertension (p=0.02) and systemic hypertension (p=0.045).

Conclusion: Coronary atherosclerosis is not uncommonly found in patients with systemic sclerosis. Apart from contribution of conventional risk factor including systemic hypertension, patients with scleroderma specific antibodies, limited scleroderma and those with pulmonary hypertension are more likely to have increased in cardiovascular risk.

TITLE: CARDIOVASCULAR RISK PROFILE OF PATIENTS WITH PSORIATIC ARTHRITIS COMPARED TO CONTROLS - THE ROLE OF INFLAMMATION

Principal investigator: Dr. Lai-shan Tam, Prince of Wales Hospital

Objective: To examine the distribution of traditional and novel risk factors of cardiovascular disease (CVD) in patients with psoriatic arthritis (PsA) compared to healthy controls.

Methods: We compared risk factors for CVD between 102 consecutive PSA patients and 82 controls, adjusting for body mass index (BMI). We also assessed the role of inflammation on the CVD risk factor by using a BMI and high-sensitivity C-reactive protein (hsCRP) -adjusted model.

Results: The BMI of PsA patients were significantly higher than healthy controls. After adjusting for the BMI, PsA patients still have a higher prevalence of diabetes mellitus (DM) (OR 9.27, 95%CI 2.09-41.09) and hypertension (OR 3.37, 95%CI 1.68-6.72), but a lower prevalence of low HDL cholesterol (OR 0.16, 95% CI 0.07-0.41). PsA patients have significantly increased systolic and diastolic blood pressures, insulin resistance, and inflammatory markers (hsCRP and white cell count) compared to controls. PsA patients have higher HDL cholesterol and apolipoprotein (Apo) A1 levels; and lower total cholesterol (TC) and LDL cholesterol levels; and a lower TC/HDL ratio. However, the Apo B level (p<0.05), and the Apo B/ Apo A1 ratio (p=0.07) were higher in PsA patients. Further adjustment for hsCRP level rendered the differences in the prevalence of hypertension and DM; the TC, and sugar levels; and white cell count non-significant between the two groups; while the differences in other parameters remained significant.

Conclusion: This data support the hypothesis that PsA may be associated with obesity, hypertension, dyslipidemia, and insulin resistance because of the shared inflammatory pathway.

WINNERS OF HKARF RESEARCH GRANT 2008

1. Dr. Leung Ying-ying, North District Hospital

Project: Evaluation of the Arthritis Disease Self-management Program in Chinese patients with Psoriatic Arthritis as compared to Rheumatoid Arthritis (CRE 2008.268)

2. Dr. Mok Mo Yin, Temy, Queen Mary Hospital

Project: A pilot study on the clinical usefulness of interferon-gamma assay in detection of latent tuberculosis in patients with rheumatic diseases given anti-TNF-therapy in Hong Kong

If you would like to know more details of the research grant, please visit our website: <http://www.hkarf.org/>

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