

Hong Kong Association of Rehabilitation Medicine Newsletter



Jun 2009

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Annual social function @ May 21 2009

Every year we have a social function. It is a chance for our HKARM members' gathering, for them to relax and chitchat. This time round, we have Chinese dinner at The Graces Restaurant at 20th floor of Lee Theatre Plaza, Causeway Bay. Bring \$50 for yourself and \$100 per head if you are going to bring along a friend, a spouse or a family member. It starts right after May's Inter-hospital rehabilitation meeting.

Editorial board

2009 Annual Scientific Meeting (ASM) & Workshop

Announcement "Advances in Wound Care"

Date: Nov 14, 2009 (Saturday)

Time: Workshop in the morning

ASM in the afternoon

Venue: Workshop in Conference room, Rehabilitation Block, Kowloon

Hospital; ASM in Lecture Theatre, HAHO

Topics include:

Pressure ulcer assessment & monitoring of healing

Pressure mapping techniques

Electrical stimulation in pressure sore prevention

Pulsatile lavage technique

Negative pressure wound care therapy (V.A.C. system)

Maggot debridement therapy

Surgical management of pressure ulcers

Management of DM foot ulcers

Academic Column

Conditioning before playing a particular sport should form part of the rehabilitation of sports medicine since this improves performance of the athlete and more importantly reduces injury.

Dr Gloria Cheung, Haven of Hope Hospital

The objectives and sequence of conditioning should be clearly defined and followed before commencement:

1. Attainment of general athletic fitness: This includes muscular strength, general flexibility, muscular endurance and cardiorespiratory endurance.
2. Sports specific athletic fitness: the emphasis would be on the domains listed above but catered for the particular sport. E.g. muscles of legs in sprinters, shoulders and back in swimmers; flexibility in posterior shoulder for tennis players. Alactic-anaerobic energy system best suits tennis players where speed and power are paramount in the game, whereas the oxidative aerobic systems would be for marathoners. Muscles balance, i.e. proper agonist-antagonist ratio is equally crucial as actual strength in enhancing performance and reducing injury.

The three basic variables of intensity, frequency and duration of exercise training apply to conditioning as well. The prescription will vary depending on the phase of conditioning. The sequence is critical as extensive aerobic training may be detrimental to strength gains and adequate muscular strength and balances of forces should have been achieved before getting to field training. Periodizationⁱ allows peaking of the athlete fitness to concur with designated competitions or games. Rest period for recovery should be incorporated in the conditioning itinerary.

Other principles of conditioning will also be introduced since they also affect acquisition of maximum performance.

Adaptation: the body adapts to stress applied, biomechanical or metabolic as long as it is within body tolerance. The progression will lead to improvement. On the contrary, if the stress is too excessive, as in overtraining, injury may be resulted. Under-dosed training will produce little fitness.

Specificity: metabolic requirement biomechanical demand differs from one sport to another. Tennis, which stresses on power and agility uses energy mainly from alactic anaerobic energy system (70%), whereas marathoners depend on aerobic oxidation (70%).ⁱⁱ

Mechanical conditioning is another area of specificity. Rotator cuff strengthening would be vital for tennis or volleyball players whereas plyometric drill would be essential for volleyballing and sprinting.

Recovery: this is for rest and repair and is obligatory.

Variety: variation in conditioning avoids staleness and maintains interests. It could also promote adaptation.

Individuality: skills, abilities, physical fitness, rate of adaptation are unique for every athlete and

should be taken into account in exercise prescription to produce optimal level of fitness.

The cycle of periodization can start with the active rest phase, comes after the competitive season and consists of a brief period of total rest (1-2 days) and then relative rest by participating in activities not related to the primary sport. Off-season or general preparation phase aims to enhance subsequent sport specific training. General fitness training as stated above will be the main work. Preseason or specific preparation phase then follows in which general training will continue but less in volume and sport specific skill will be practiced and refined. Flexibility emphasis will shift to area exposed to maximal tensile loads. Endurance training will cater to the specific sport demand-high intensity-short duration for power sports and low intensity-long duration for endurance sports. Early season phase will be a high conditioning period where sports specific training continued and endurance work will lessen but maintained. The late-in-season phase will be the last phase. The goal is to provide maximum efficiency and performance for intense competition. The emphasis is on sports specific training and general conditioning will be tapered. This period is usually not long otherwise overload injuries may ensue. Shorter cycles are designed for all year round sports like tennis and typical long cycle will suit sports with well-defined seasons like football.

Conditioning should be preceded by evaluation to determine level of fitness, which could be basic field test or full pre-participation examination of flexibility, strength, power and endurance. This will identify areas of strength and more a time deficits in the professional or amateur athlete. The most appropriate course of conditioning to optimize sport specific athletic fitness could then be planned.

ⁱ The plan for conditioning based on volume (frequency times duration) and intensity of the work done during various periods of the athletic season is termed periodization.

ⁱⁱ The plan for conditioning based on volume (frequency times duration) and intensity of the work done during various periods of the athletic season is termed periodization. The three energy systems are alactic anaerobic system, which depends on ATP-CP, anaerobic glycolysis system and the oxidative aerobic system. A tennis player depends 70%, 20%, 10 % respectively for these systems. A long distance runner would be 10%, 20% and 70% respectively.

Reference:

1. W Ben Kibler, Sport Specific conditioning, the American Journal of Sports Medicine, 1994, vol 22 pg 424-432.
2. The Team Physician and conditioning of Athletes for sports: A consensus statement.

Interhospital Rehabilitation Meeting highlights ([Click Here for slides](#))

Jan 2009: “A young stroke patient with awkward gait”

Dr. YUEN, Ka Hong

- A young ICH patient with severe right lower limb spasticity was unable to walk independently, despite the preservation of good proximal muscle power. The walking gait was videotaped and beautifully demonstrated the severe equinovarus abnormality. The possible involved muscles included: gastrocnemius, soleus, tibialis anterior (TA) and tibialis posterior (TP). To differentiate the contribution of TA, diagnostic posterior tibial nerve blockade by lignocaine was used. Afterwards, patient was injected 1000 units of Dysport with a dilution of 500 units in 2.5 ml NS under EMG guidance. Patient was then subjected to a course of vigorous physical training. The gaits at 3 and 8 weeks were videotaped and obvious improvement was observed and patient could effectively walk with a quadrapod by himself.
- Common LL spastic gait patterns and the use of gait analysis were discussed. Rehabilitation and the use of Botulinum Toxin were presented. Phenol obturator blockade was also discussed. Evidence based literature of Botulinum toxin A was critically reviewed. It was concluded that large RCTs of Botulinum therapy with proper functional outcome measurement were still needed.

Feb 2009: “Athletes with anterior cruciate ligament re-construction”

Dr Thomas Hon Kuen Cheung, Kowloon Hospital

Anterior cruciate ligament (ACL) injury is the most frequently known sports injury, where healing mechanisms hardly work. High risk sports include soccer, basketball, football, tennis, volleyball and alpine skiing. ACL injuries are becoming more common as greater numbers of children and adolescents participate in sports programs and more girls participate in collision sports, such as basketball and soccer.

The goal of the treatment of ACL injuries in athletes is the restoration of maximum function while preventing recurrent injury. A successful plan requires making the correct diagnosis and initiating appropriate treatment, with a staged approach to rehabilitation. Many cases of this injury require surgical treatment due to remaining instabilities that greatly trouble athletes in their sports activities.

The most effective and important intervention for ACL injury is still prevention. Well designed prevention program involving athletes in a number of high-risk sports (e.g, basketball, soccer, skiing) have demonstrated decreased rates of ACL tear among athletes. Different prevention programs incorporate specific drills that more closely approximate the demands of particular sports, and may hold advantages for athletes involve in these sports.

March 2009: “Immobilization caused immobilization”

Dr PK Tam, Tung Wah Hospital

Heterotopic ossification (HO) is the formation of mature, lamellar bone in non-skeletal tissue. It is usually associated with neurological conditions or trauma and the commonest associations include spinal cord injury, traumatic brain injury, total hip arthroplasty and acetabular fracture. Clinical features include local swelling, heat, pain and limited range of movement or even fever.

Triple phase bone scan is the most sensitive test that can detect HO formation as early as 2 weeks after the injury. Plain radiographs are specific but lesions may be visible 4-6 weeks after an abnormality is detected on bone scan. Serum alkaline phosphatase (ALP) is a commonly used marker though it may not be elevated in all cases and the severity or maturity of the lesion could not be deduced from ALP level.

Up till now, there is a lack of strong evidence for any effective form of treatment of HO. Gentle range of movement exercises in the pain free-range and symptomatic treatment should be given. etidronate, a bisphosphonate, has been suggested as a possible treatment to halt the progression of HO, but the evidence is not sufficient and this drug is not readily available in Hong Kong. Non-steroidal anti-inflammatory agents like indomethacin and radiation therapy have been shown to be effective in the prophylaxis of HO after total hip replacement but not as a form of treatment. Finally, in selected patients, surgical resection of the HO can be considered though the recurrence rate can be over 50%.

April 2009: “Mirror mirror on the wall”

Dr Gloria Cheung Haven of Hope Hospital

Mirror therapy, a novel treatment for various pain syndromes and hemiplegia will be introduced in this topic presentation. The use of mirror therapy in a pain patient will be presented followed by a brief discussion on the neuroscience behind the novel rehabilitation technique; its use in phantom pain, complex regional pain syndrome and hemiplegia. The evidence from prospective studies in these areas will also be highlighted.

Editorial board choices:

Advances in Stroke 2008

Stroke May 2009; e288-

Update on the genetics of stroke and cerebrovascular disease

Martic Dichgans, Robert A Hegele

Genomewide association studies (GWASs) are an unbiased and comprehensive approach to identify common risk alleles for complex diseases of adulthood. By genotyping >310,000 single nucleotide polymorphisms (SNPs) in over 1700 intracranial aneurysm cases and 7400 controls, investigators recently identify several common SNPs that showed significant association with intracranial aneurysms. Another important finding has been the identification of risk variants for ischaemic stroke on chromosome 4q25. One of the themes in stroke is inflammatory system. Investigators from Austria find association between deletion mutation in the chemokine receptor CCR5 and lower risk of stroke. Genetics is a rapidly developing field. Expectations are high that genetic discoveries will eventually be translated to clinical applications, to improve both diagnosis and treatment.

Advances in emerging therapies

Peter Higgins, Kennedy R Lees

Thrombolysis: ECASS-3 (European Cooperative Acute Stroke Study confirmed the use of thrombolytic therapy 3-4.5 hours after onset of ischemic stroke. Ultrasound-assisted thrombolysis may improve recanalization rates though increased bleeding. It merits more robust safety evaluation. The discontinuation of the AbESTT-II (Abciximab in Emergency Treatment of Stroke Trial) study due to excess bleeding has raised concern about
