DIVISION OF RHEUMATOLOGY

Rheumatology is a developing sub-specialty both within the Department of Medicine and in Hong Kong. Currently, the team consists of one full-time academic staff, 2 honorary lecturers, 2 post-membership career trainees, one full-time technician and one research assistant.

Staff who have contributed to the achievements of the Division during the past decade include the following:

Current members

Physicians

Dr. R.W.S. Wong, *MBBS, FRCP(E), FRCP(G), FHKCP, FHKAM (Medicine)*
Consultant and Chief of Division

Dr. C.S. Lau, *MD (Hons), MRCP(UK), FHKCP, FHKAM (Medicine)*
Lecturer

Trainees

Dr. K.W. Lee, *MBBS, MRCP (UK)*
Medical Officer

Dr. C.C. Mok, *MBBS, MRCP (UK)*
Medical Officer

Past members

Dr. K.L. Wong, *MD, MRCP(UK), FHKCP, FHKAM (Medicine)*

Dr. K.H. Chan, *MBBS, FRCP(E), FHKCP, FHKAM (Medicine)*

CLINICAL SERVICE

The Division is responsible for the investigation and management of patients with various rheumatic diseases on both in- and out-patient basis. There is one General Rheumatology Clinic in Tang Chi Ngong Hospital and one in Sai Ying Poon Polyclinic Hospital. The average patient attendance at each of these 2 clinics is 70 per week. In addition, there are 2 Rheumatology Clinics (Dr. RWS Wong) and one Special Rheumatology Clinic (Dr. CS Lau) in Queen Mary Hospital. An average of a further 70 patients are seen at these 3 clinics each week. An alternate week Combined Orthopaedic and Rheumatology Ankylosing Spondylitis Clinic with an average attendance of 30 patients is also in place at the Duchess of Kent Hospital in Sandy Bay. A wide spectrum of rheumatological disorders ranging from soft tissue rheumatism to various forms of arthropathies, connective tissue disorders and vasculitides are seen at these clinics. For arthritis patients requiring surgical intervention, there is close collaboration with the orthopaedic surgeons. Thus, patients from the Tang Chi Ngong Clinic can be referred directly to Dr FK Ip of the Pamela Youde Nethersole East Hospital and those from the Sai Ying Poon are seen by University Orthopaedic Surgery staff in the same clinic.

In-patient treatment is based both at the Queen Mary Hospital and the McLehose Medical Rehabilitation Centre (MLMRC) in Sandy Bay. The MLMRC has a good setup for the multi-disciplinary management of patients with chronic arthritis with facilities for physical therapy, occupational therapy and orthotic and prosthetic appliances. Help and advice from medical social workers, clinical psychologists and orthopaedic surgeons are also available.

As most rheumatic disorders are chronic and disabling, patient education is an essential part of their rehabilitation process. Public education is also needed to enhance the community's awareness of our patients' plights. Both are being accomplished through our Division's involvement in the various rheumatic disease patient self-help groups in Hong Kong. These include the Hong Kong Lupus Association, Hong Kong Rheumatoid Arthritis Association, Ankylosing Spondylitis Self Help Group and the Alliance for Patient's Mutual Help Organisation. There is also participation in public health exhibitions and lectures as well as contribution of published articles on related issues in the media.

There are also close links between the Division

and the Hong Kong Society for Rehabilitation and staff members are advisors of the Society's recently set up Community Rehabilitation Network and Vocational Re-training Services for Physically Disabled Persons.

EDUCATION

Undergraduate clinical teaching in Rheumatology takes the format of regular lectures (one in Immunology and 6 in Rheumatology), small group tutorials and seminars as well as teaching at bedside and specialist clinics. In addition, there are 2 Integrated Teaching Sessions each year on AIDS and Management of Rheumatoid Arthritis. We also supervise elective medical students, local and overseas, in Rheumatology. Besides teaching undergraduate medical students, the Division also takes part in the teaching of undergraduate dental students (2 lectures), BSc (Immunology) students (2 lectures and 2 tutorials) and nurses (2 lectures).

Postgraduate training in Rheumatology has changed much over the last few years. There is active participation in the Basic Physician and Rheumatology Specialist Training Programmes of the Hong Kong College of Physicians (HKCP). Dr. RWS Wong is the chairman while Drs. CS Lau and KH Chan (Honorary Lecturer) are members of the College's Subspecialty Advisory Committee in Rheumatology. A quarterly Inter-hospital Rheumatology Meeting was set up in 1992 and other postgraduate teaching activities have since been in place. These include a weekly Rheumatology Round, combined Rheumatology/ Radiology Meeting, combined Rheumatology/ Histopathology Meeting, Clinical Immunology Meeting and Journal Club. These meetings are attended by physicians, clinical immunologists and rheumatology trainees from Queen Mary Hospital as well as other district general hospitals and contribute to part of their training accreditation. Other postgraduate teaching commitments include small group tutorials and bedside teaching for local HKCP/Royal College of Physicians (UK) diploma examination candidates. The Division also contributes questions for the written paper in this examination. There are also 3 regular lectures for licentiate doctors.

Through the Division's involvement in the Hong Kong Society of Rheumatology, we have been able to extend postgraduate rheumatology training to a broader group of doctors, notably private general practitioners. Regular meetings have been organised and renowned local and overseas rheumatologists were invited to speak at these meetings.

RESEARCH

Due to understaffing of academic members of the Division, research in rheumatology was relatively scarce in the 1980's. There is, however, improvement in recent years with support from the Department and successes in bidding for competitive research grants. Basic research directions are being established. Collaborative links with other clinical and pathology departments of the University as well as many rheumatology centres overseas have also been set up. Most of the projects are yielding encouraging results and have been selected for presentations at various major regional and international rheumatology conferences. Further expansion is envisaged. Research in rheumatology, past and current, is summarised below:

Systemic lupus erythematosus

Systemic lupus erythematosus (SLE) is an autoimmune disorder characterised by a profound disturbance of immune mechanisms. It typically affects female of reproductive age and may manifest with multi-organ involvement. Because of these, SLE has always stimulated interests from researchers of various disciplines.

Clinical features of SLE in Hong Kong have been studied. Thus, the annual incidence of this condition presenting to the Queen Mary Hospital and the Nethersole Hospital was estimated as 0.13%. The clinical pattern of this disease such as patients' initial presentation, course of illness, response to treatment and development of complications to treatment have been well documented. Particular emphasis was made on major organ complications of SLE. Prospective studies on the neurological manifestations, cardiac abnormalities and assessment using

advanced echocardiographic techniques, development of acute severe thrombocytopenia and clinical manifestations of patients who possessed the anti-phospholipid antibodies have been carried out. A study of the mechanism of thrombosis in patients with SLE and anti-phospholipid antibody syndrome was completed recently and evidence of vascular damage, abnormal plasma fibrinolysis, activated platelets and white cells were found in these patients. Correction of these abnormalities may improve prognosis.

Since SLE predominately affects young females, the outcome of pregnancy in these patients has been a major concern. A prospective study was therefore carried out and it showed low maternal and fetal morbidity and mortality rates can be achieved with close maternal monitoring and good neonatal supportive care.

Recent studies have concentrated more on the aetiology and pathophysiology of SLE. Immunogenetics of this condition were studied and HLA B5 was found to be associated with the presence of other autoimmune diseases while HLA DR2 was associated with the presence of anti-Ro antibody. Acetylator status and the development of SLE was studied but no significant association was found. An infective agent(s) has been suggested to play a role in the aetiology of SLE but such an agent(s) has remained elusive. Cytomegalovirus and Ebstein Barr virus were examined but neither was found to be associated with the onset or relapse of SLE. On the other hand, susceptibility to this condition may be linked to a deficiency state in mannose binding protein, a recently characterised lectin which is capable of activating the complement pathway. Results from this study have generated many follow-up projects which are currently underway. Other possible aetiological factors such as defective apoptosis are also under investigation.

Whatever the cause of SLE, there are widespread changes in the patient's immune system. Increased T-lymphocyte activity was suggested by the demonstration of increased interleukin-2 receptor expression on peripheral lymphocytes of these patients. The level of soluble interleukin-2 receptor in serum correlated with clinical disease activity. The role of B-cells in SLE has also been studied. Results from a cross-sectional study on CD5+ve and CD5-ve B-lymphocytes suggested excessive production of pathogenic anti-dsDNA antibodies by CD5-ve B-cells may be due to diminished CD5+ve B-cell activity.

The pathogenic mechanism of complications of SLE is due mainly to auto-antibody production, immune complex formation, complement activation and consequent vasculitis. Measurement of complement degradation products and factor VIII von Willebrand factor antigen (vWF), an endothelial product, was assessed as markers of disease activity. Both showed significant correlation with fluctuation of disease activity but plasma vWF measurement appeared to be more clinically applicable.

Other ongoing SLE projects include a multi-centre study on lupus nephritis therapy and prevention and treatment of steroid induced osteoporosis.

Raynaud's phenomenon and systemic sclerosis

Raynaud's phenomenon (RP) may be primary or secondary, mostly to connective tissue disorders. Patients characteristically complain of pain and blanching of fingers following cold exposure and emotional stress. Most of the related work aimed (1) to determine the pathophysiological role of the haemostatic systems in primary and secondary RP and (2) to explore the potential for treatment with manipulation of the arachidonic acid (AA) pathway in favour of anti-thrombotic and vasodilatory effects. Our previous studies clearly demonstrated the key aetiological role of abnormal haemostasis in RP, particulary those with the secondary form such as systemic sclerosis. These patients had endothelial dysfunction in addition to platelet and white cell activation which occurred in all RP patients. It was likely that most of these abnormalities were a consequence rather than a cause of RP. Nevertheless, such changes might worsen the condition by further decreasing digital blood flow. Correction of these changes can be achieved through manipulation of the AA pathway. The effects of direct intravenous infusion of prostacyclin, oral and intravenous administration

of prostacyclin analogues and thromboxane A2 receptor blockade were investigated. All were shown to have potential therapeutic value.

Rheumatoid arthritis

Rheumatoid arthritis (RA) is a chronic disabling inflammatory polyarthritis. Its incidence in Hong Kong was estimated as 0.12% in an earlier study. Susceptibility to this condition was shown to be linked to HLA DR allelic third hypervariable region sequences.

Once RA has declared itself, it may run a progressive relapsing and remitting course and a careful management plan is required to prevent deterioration and complications. The use of anti-rheumatic drugs remains the main stay of treatment for these patients. Dietary modulation of essential fatty acid intake has been studied and the use of eicosapentaenoic acid was shown to have anti-inflammatory effects. Newer anti-rheumatic drugs such as bucillamine and analogues for RA are also being studied in collaboration with the Department of Chemistry. Thunder God Vine (triptolide), a Chinese herbal medicine, is widely used for RA and SLE in Mainland China and Hong Kong. The immunological effects of this agent have not been fully evaluated and a collaborative project with the Department of Chemistry has recently been set up to have these delineated. Preliminary results suggest this drug may have cytotoxicity effects.

Ankylosing spondylitis

There have been few studies in ankylosing spondylitis (AS). Current on-going studies include (1) HLA B27 tissue antigen sub-typing and (2) the clinical usefulness of facet joint depo-steroid injection in patients with acute back symptoms.

Others

The Division is involved (Dr. CS Lau is Committee Member) in a recently set up World Health Organisation Study on Low Back Pain. This study aims to evaluate and compare different forms of clinical psychological and socio-economic assessments of patients with chronic low back pain.

FUTURE DIRECTIONS

There is an urgent need to expand Rheumatology both within the Department and in Hong Kong. Most rheumatic disorders are chronic and disabling. Some, such as SLE and the vasculitides, may be life-threatening. Rheumatic complaints account for a large proportion of the general practitioner's consultation. Well-structured undergraduate and postgraduate teaching programmes are therefore needed to prepare our students and colleagues to deal with patients with rheumatic disorders. Improvement in the management of our patients will only come about with better understanding of these conditions, and this could only be accomplished by basic and clinical research. Our Division, with support from the Department, will continue to work hard to fulfil the above objectives and to lead in the development of Rheumatology in Hong Kong and the Region. Some ground work has been laid but much more needs to be done. This is especially so in research which requires much dedication. Work on SLE will continue to expand. However, the other major rheumatic disorders such as RA and AS have, in general, been relatively neglected. The current academic staffing level needs to be revised to cater for further expansion. Obviously, patients' eventual outcome is our ultimate concern and improvement in the provision of patient care has to continue. A Centre for Rheumatic Disorders with full facilities for patient counselling and education, treatment of in- and out-patient acute and chronic rheumatic complaints as well as basic and clinical research should not be something that we dream of but something that we will continue to strive for.

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† *Publications produced by staff whilst attached to or visiting other centres*

‡ *Publications produced by staff while employed at other centres before joining the Department*

* *Publications in non-indexed journals*

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