

Annual Report of

THE ALLERGOLOGY, DIAGNOSTIC & CLINICAL RESEARCH UNIT (ADCRU)
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Year of Review: 2006

Aims & Objectives

The Allergy, Diagnostic and Clinical Research Unit (ADCRU) continues to serve as a centre for the diagnosis and management of allergic diseases. It serves as a specialised clinical arm of the Allergology Unit of the University of Cape Town. It has 5 main areas of operation:

- a) a diagnostic and research allergology laboratory
- b) a clinical trial research unit
- c) specialised allergy clinics
- d) training for undergraduates, fellows and postgraduate students in the field of allergology
- e) a patient education facility



Head: Associate Professor Paul Potter

Overview of Activities

The unit expanded significantly during the year 2006 on the areas of laboratory services, clinical services, clinical trials, collaborative research and publications.

The laboratory increased its range of diagnostic tests with a special interest in the area of the role of tryptase in anaphylaxis, sodium sulphite and benzoate sensitivity testing using the CAST compared with double blind placebo challenge testing in the clinic setting. The laboratory has also become a service provider for the National Health Laboratory Service for specialised allergy tests, e.g. Tryptase for anaphylaxis and Sulphido Leukotriene Release tests.

The immunotherapy clinic has also expanded significantly with wider utilization of sublingual immunotherapy for children and adults with house dust mite or grass pollen sensitivity. Patients with venom and animal allergies still require the subcutaneous immunotherapy route. A new focus of this clinic is the effect of immunotherapy on Quality of Life in Allergic Rhinitis.

An area of expertise for which there is increasing demand in the clinic is in the field of controlled drug allergy testing for antibiotic and anaesthetic agents.

The telephonic consultation service in the field of allergy for practitioners around South Africa is used on a daily basis.

Patient education continues to be an important focus in our clinical approach to allergy management. This is not only important for inhalent allergies (e.g. asthma, rhinitis), but particularly in the field of drug allergies and food allergies. 2 of our nursing sisters have now obtained the National Asthma Education Programme Diploma in Asthma Education.

The unit provided lectures and project supervision for dietetics MSc students from the Cape Technikon students and clinical fellows in training (M.Med and the Diploma in Allergy of the College of Medicine of South Africa).

Collaborative basic research projects continued with the University of Stellenbosch (in the field of TB, Parasites and Allergy). In addition the unit engaged in a further 6 international clinical trials,

bringing our total number of trials for the unit to a total of 36 to date. 5 members of the staff passed the Certificate of Competence required for the Dispensing Licence now necessary for conducting clinical trials approved by the MCC.

Basic and clinical research conducted in the unit was presented at the European Academy of Allergy and Clinical Immunology (EAACI) in Vienna 2006, the Allergy Society of South Africa Congress in Sun City, Pilanesberg.

Dr. Angela Orren, a visiting scientist from the United Kingdom, continued her visit to our department to supervise Cara van Wyk on her MSc project reviewing outcomes of patients with C6 deficiency.

Prof. Eugene Weinberg took long leave to take up a temporary post in London as Head of the Allergy Department of St. Mary's Hospital.

Training was given by our nursing sisters on skin prick testing and Sr. Baker lectured and examined nurses who took part in the National Asthma Education Diploma Programme. Dr. Hawarden conducted a series of talks to the Pharmacologists on drug allergy and gave training in the management of anaphylaxis to the Ambulance College of the Technikon and contributed to their new guidelines for the management of anaphylaxis. She also contributed to the new edition (2006) of the South African Medicines Formulary.

Dr. Wardah Peck joined our department as a Medical Officer assisting with clinical trials. Dr. Shirani Naidoo spent time in our department learning techniques in allergen immunotherapy.

Dr. Barbara Nurse has supervised the laboratory cytokine studies and T lymphocyte studies on the long term cohort of patients undergoing house dust mite immunotherapy via the sublingual route. This is a self initiated basic research study of the unit.

Prof. Paul Potter also served on the WHO-ARIA update consensus committee (in association with GALEN), the World Allergy Organization subcommittee on allergy specialization and training and the South African Allergic Rhinitis Working Group update workshop and regional Chairman of central and South African chapter of Interasma.

A total of 40 papers were published in international and South African journals during 2005-2006.

Staff

Clinicians:

Associate Professor P.C. Potter (Director)
Associate Professor E. Weinberg
Dr. D. Hawarden
Dr. S. Emanuel
Dr. W. Peck

Laboratory Technologist:

Mrs. B. Fenemore

Collaborative Research Scientists:

Dr. B. Nurse
Dr. A. Lopata
Mrs. R. Prescott
Ms. S. Salie
Ms. M. Schinkel

Clinical Sisters:

Sr. S. Baker (Clinical Trial Co-Ordinator)
Sr. H. Thomas (Clinics and Immunotherapy)
Sr. G. Poggenpoel (Clinical Trial Co-Ordinator)
Sr. A. Toerien (part time)
Sr. G. Brown (part time)

Secretary:

Mrs. L. Terblanche

Post Graduate Students:

Mrs. C. Stassen (MSc Student) (Immunology)
Mrs. G. Stear (Dietetics)

Visiting Scientist:

Dr. A. Orren

Clinical Research

Areas of Basic Clinical Research ongoing in ADCRU:

1. Allergen Immunotherapy via the sublingual route: T cell and cytokine changes, efficacy and quality of life studies.
2. Chronic urticaria and angioedema: The significance of autoantibodies to the IgE Epsilon receptor in patients with chronic urticaria, and the value of CAST (Sulphido Leukotriene testing).
3. Latex allergy: The applicability of CD63 as an activation marker on basophils (using FACS) for diagnostic sensitivity testing for Penicillin.
4. Food additive sensitivity: Establishment of cut-off levels for the sulphidoleukotriene activation test (CAST) for Sodium Benzoate sensitivity.
5. C6 deficiency: A follow up study of 30 patients with complement component C6 deficiency, with respect to morbidity, associated autoimmunity and allergic disease expression.

Applied Research & Clinical Trials

Phase 2 and 3 clinical trials are ongoing in the following areas:

1. Atopic dermatitis: Long term studies with a non-steroidal anti-inflammatory in young children (under the age of 5).
2. Allergen Immunotherapy: Long term studies with sublingual allergen vaccines in adults.
3. Asthma: Paediatric and adult studies with inhaled steroids.
4. Seasonal and Persistent Allergic Rhinitis: Studies with intranasal steroids and with oral antihistamines in adults and children and intranasal steroids.
5. Early treatment and prevention of asthma in atopic children.
6. Studies of antihistamine efficacy in patients with chronic urticaria.

Clinical studies were conducted for the following multinational companies: *Watson Laboratories, Stallergenes, Novartis, MDS Pharma, UCB, Altana and Bühlmann Laboratories.*

Specialised Services

1. **Allergen Immunotherapy and Clinical Allergy Testing:** The Wednesday morning allergen immunotherapy clinic not only administers “injected” vaccines (particularly for bee venom hypersensitivity), but particularly focuses on education for SLIT (sublingual immunotherapy) patients and training for doctors in this field. In addition specific allergy testing using fresh extracts and prepared extracts of indigenous allergens is available, particularly for food and seafood allergies. Open and double blind placebo controlled food challenges are also available.
2. **Laboratory:** The ADCRU laboratory offers a comprehensive diagnostic panel for the confirmation of specific sensitivity to over 260 allergens using the Unicap (Pharmacia) system. In addition Specific IgE testing for indigenous allergens is available using Western Blot Techniques. In addition protein analysis tests can be conducted for latex gloves, nasal smear cytology, serum tryptase determinations and samples processed for autoantibody determinations to the fc Epsilon receptor on basophils.
3. **Drug Hypersensitivity Testing:** The unit continued to provide postgraduate clinical training for fellows and diplomats in allergology, particularly in the field of immunotherapy, drug allergy sensitivity testing and food allergy. Training sessions have also been conducted in resuscitation and allergy education and in skin prick testing for nurses and doctors. In addition members of the unit have been involved in several CME lectures in allergy to medical practitioners at local private hospital symposia, at Groote Schuur Hospital, Allergy Society of South Africa intercity meetings and company-sponsored symposia both locally and internationally.

Publications: 2005-2006

A. ARTICLES IN INTERNATIONAL PEER REVIEWED JOURNALS

1. The association of prolonged breastfeeding and allergic disease in poor urban children. Obihara CC, Marais BJ, Gie RP, Potter PC, Lombard CJ, Kimpen J, Beyers N. *European Resp Journal*, 2005; 25: 78-977.
2. Inverse association between M.tuberculosis infection and atopic rhinitis in children. Obihara CC, Beyers N, Gie RP, Potter PC, Marais BJ, Lombard C, Enarson DA, Kimpem JLL. *Allergy, European Journal of Allergy and Clinical Immunology* 2005; 60: 1121-1125
3. Long-term control of atopic dermatitis with Pimecrolimus Cream 1% in infants and young children: a two-year study. Papp K, Weibel T, Folster-Holst R, Ortonne JP, Potter PC, De Prost Y, Davidson M, Barbier N, Goertz HP, Paul C. *J Am Acad Dermatol* 2005 Feb; 52(2): 240-246.
4. Long-term treatment of atopic dermatitis with Pimecrolimus Cream 1% in infants does not interfere with the development of protective antibodies after vaccination. Papp K, Breuer K, Meuser M, Ortonne JP, Potter PC, De Prost I, Davidson M, Barbier M, Goertz HP, Paul C. *J Am Acad Dermatology* 2005 Feb; 52(2): 247-253.
5. Occupational allergy in laboratory workers caused by the African migratory grasshopper *Locusta Migratoria*. Lopata AL, Fenemore B, Jeebhay MG, Gade G, Potter PC. *Allergy* 2005 Feb; 60(2): 200-205.
6. Low prevalence of latex sensitivity in South African Spina Bifida children. Johar A, Lim D, Mad Arif S, Hawarden D, Du Toit G, Weinberg EG, Motala C, Fieggen G, Yeang HY, Potter PC. *Paediatric Allergy and Clinical Immunology* 2005 Mar; 16(2): 165-170.
7. Efficacy and safety of levocetirizine on symptoms and health-related quality of life of children with perennial allergic rhinitis: a double-blind, placebo-controlled randomized clinical trial. PC Potter (for the Paediatric Levocetirizine Study Group). *Ann Allergy Asthma Immunol* 2005, August; 95(2): 175-180.
8. Hypersensitivity to aerolised spitting cobra venom. RA Prescott, PC Potter. *Annals of Allergy Asthma Immunol* 2005 Mar; Vol.94 (5): 600-603.
9. The association between atopy, asthma and tuberculin test in children living in an area with high prevalence of tuberculosis. CC Obihara, SWP van Lill, R Gie, P Potter, BJ Marais, AC Hesseling, K Lawrence, D Carman, C Lombard, E Bateman, N Beyers, JL Kimpen. *European Respiratory Journal*, 2005; 25: 970-977
10. Should we stop or start drug research in Paediatrics? (Editorial) PC Potter. *J World Allergy Org*, 2005; 17(5).
11. Immunological mechanisms in sublingual immunotherapy: what do we know? PC Potter. *Int. J on Immunorehabilitation* 2005; 7(1): 24-25.
12. Microenvironmental and serum effects on the Beta2 adrenergic receptor in asthma. PC Potter. *International Journal on Immunorehabilitation*, 2005. Proceedings: IV European Asthma Congress; 7(2): 49-50.
13. Update on sublingual immunotherapy. PC Potter. *Annals of Allergy Asthma Immunol*, 2006; 96 (Suppl 1): S22-S25
14. Autoantibodies to the FCεR1α receptor in children with chronic urticaria. G du Toit, R Prescott, P Lawrence, A Johar, G Brown, EG Weinberg, C Motala, PC Potter. *Annals of Allergy Asthma Immunol*, 2006; 96: 341-344.
15. Making the allergic child happy: treating more than symptoms. H van Bever, PC Potter. *Clinical and Experimental Allergy Reviews*, 2006; 6: 6-9.
16. Mycobacterium tuberculosis infection may protect against allergy in a tuberculosis endemic area. Obihara C, Beyers N, Gie RP, Potter PC, Bateman E, Lombard C, Kimpen J. *Clin Exp Allergy*, 2006; 36: 70-76.

17. Allergy Practice Worldwide: A Report by the World Allergy Organization Specialty and Training Council. Warner J., Kaliner M., Cruci C., Del Giacco S., Frew J., Liu G., Maspew G., Moon H., Nakagawa T., Potter P.C., Rosenwasser L., Singh A., Valovirta E., Van Cauwenberg P. *Allergy Clin Immunol Int. J World Allergy Org* 2006; 18: 4-10.
18. Allergy Practice Worldwide: A Report by the World Allergy Organization Specialty and Training Council. *Int Arch Allergy Immunol*, 2006; 139: 166-174. Warner J., Kaliner M., Cruci C., Del Giacco S., Frew J., Liu G., Maspew G., Moon H., Nakagawa T., Potter P.C., Rosenwasser L., Singh A., Valovirta E., Van Cauwenberg P. *Int Arch Allergy Immunol*, 2006; 139: 166-174.
19. Requirements for Physician Training in Allergy. Kaliner MA, Del Giacco S, Crisci CD, Frew J, Liu G, Maspero J, Moon H, Nakagawa T, Potter PC, Rosenwasser LJ, Singh AB, Valovirta E, Van Cauwenberge P, Warner JO; (WAO Specialty and Training Council). *Allergy Clin Immunol Int – J World Allergy Org*, 2006; 18: 92-97.
20. Pharmacologic and anti-IgE treatment of allergic rhinitis ARIA update (in collaboration with GA²LEN). *Allergy*, 2006; 61: 1086-1096.
21. Pollen aeroallergen sensitization in children with seasonal allergic rhinitis. C Baena-Cagnani, A Finn, P Potter, EO Meltzer, U Wahn, A Emeryk, P Hardy, E Ruuth. *Allergy Clin Immunol Int – J World Allergy Org*, 2006; 18(5): 184-191.

B. ARTICLES PUBLISHED IN SOUTH AFRICAN MEDICAL JOURNALS (PEER REVIEWED)

1. A clinical approach to bee sting allergy. PC Potter. *Current Allergy Clin Immunol* 2005, 18(2): 68-72.
2. Childhood atopic eczema consensus document. AI Manjra, P du Plessis, R Weiss, CM Motala, PC Potter, N Raboobee, N Ndlova, M Davis, EG Weinberg. *SAMJ*, June 2005; 95(6): 435-440.
3. Problematic childhood atopic eczema consensus document. PC Potter, AI Manjra, P du Plessis, N Raboobee, N Ndlova, M Davies, E Weinberg (Members of the SA Childhood Working Group of the Allergy Society of South Africa). *SAMJ*, Feb 2006; 96(2): 86-87.
4. The Allergy Clinic: 50 Years. EG Weinberg, PC Potter, C Motala. *SAMJ*, 2006; 96 (9): 902-904.
5. Requirements for Physician Training in Allergy. Kaliner MA, Giacco SD, Crisci CD, Frew AJ, Liu G, Maspero J, Moon H, Nakagawa T, Potter PC, Rosenwasser LJ, Singh AB, Valovirta E, Van Cauwenberge P, Warner JO; (WAO Speciality and Training Council); *Current Allergy & Clinical Immunology*, August 2006; 19 (3): 113-117)

C. ARTICLES IN NON-PEER REVIEWED JOURNALS

1. Univadis. Exemption Medica. Potter PC. Commentary on “How much is too much?” The potential for defined food allergy thresholds on *Toxic Appl Pharmacol*, 2005; 207 (2 Suppl): 152-156. O’Hourihane, Knust AC. Thresholds of allergenic proteins in foods.
2. Sublingual immunotherapy: safe allergen immunomodulation beyond the specialised centres. PC Potter. *SAMJ/CME* September 2005; 23(9): 450-452
3. Investigation of the allergic patient: the importance of early diagnosis. PC Potter. *SAMJ/CME* September 2005; 23(9): 444-448
4. Effectiveness and safety of new-generation antihistaminic antihistamines in allergic rhinitis and urticaria. PC Potter. *SA Fam Pract* 2005; 47(7): 24-28.
5. Effectiveness and safety of new-generation antihistaminic antihistamines in allergic rhinitis and urticaria. PC Potter. *SA Pharmaceutical Journal* 2005; 72(8).

6. An update of food allergy: what every healthcare practitioner should know. PC Potter. SA Pharmaceutical Journal, April 2005; 72(3): 10-13.
7. Sensitisation to 3 cockroach species in South Africa. Lopata A, Jeebhay M, Groenewald M, Manjra A, Sibanda E, Calvert J, Schinkel M, Fenemore B, Motala C, Potter PC. Current Allergy & Clinical Immunology, June 2005; 18(2): 72-78
8. Editorial: "Common allergy problems in clinical practice" Potter PC. CME September 2005; 23 (9): 429
9. More about ... common allergy problems in clinical practice: mast cell tryptase. Potter PC, Fenemore B. SAMJ/CME September 2005; 23(9): 464-466
10. An update of food allergy: what every healthcare practitioner should know. PC Potter. SA Fam Pract 2005; 47(8).
11. New developments in the field of allergy: Year in review 2005. The Specialist Forum, November 2005; 36.
12. Clinical indications and interpretation of the CAST test. Current Allergy and Clinical Immunology, March 2006; 19 (1): 14-17.
13. Clinical allergy: the year in review: highlights. Potter PC. Specialist Forum, Nov 2006; 6(11): 36-42.

D. PUBLISHED ABSTRACTS

1. Sensitization to aeroallergens and food allergens in infants with atopic dermatitis in South Africa. Potter PC. Allergy Clin Immunol Int. J World Allergy Org. Supplement (1), 2005; 100.
2. Natural history of milk allergy in atopic children. Hawarden D, Fenemore B, Hill L, Poggenpoel G, Schloss I, Stear G, Levin M, Bruk L, Potter PC. Current Allergy & Clinical Immunology 2005, August; 18(3): 131.
3. Long term implications of complete deficiency of complement component C6 in South African patients. Orren A, Stasen C, Morgan BP, Potter PC. 2005.
4. A clinical approach to bee sting allergy. Potter PC. 6th Malaysian Allergy Congress, Kuala Lumpur Proceedings 2005.
5. Sensitisation to aero-allergens and food allergens in infants with atopic dermatitis in South Africa. Potter PC. Current Allergy & Clinical Immunology 2005, August; 18(3): 131.
6. Sensitisation to three cockroach species in Southern Africa. Lopata AL, Jeebhay MF, Groenewald M, Manjra A, du Toit G, Sibanda EN, Calvert J, Lee S, Schinkel M, Fenemore B, Motala C, Potter PC. Current Allergy & Clinical Immunology 2005, August; 18(3): 134.
7. Immunological mechanisms in sublingual immunotherapy: what do we know? PC Potter. III World Congress on Immunopathology & Respiratory Allergy. Proceedings, Medimond. Pattaya, Thailand, February 2005. CD Rom
8. Determination of Aspergillus specific IgG antibodies using the Pharmacia UNICAP in airway disease. M Schinkel, PC Potter. Proceedings, EAACI 2006, Vienna.
9. Quality of life as a monitoring index in sublingual immunotherapy. Potter PC, Thomas H, Terblanche L, Baker S, Hawarden. Proceedings, EAACI 2006, pg.33, no.825.
10. Natural history of milk allergy in atopic children. D Hawarden, B Fenemore, L Hill, G Poggenpoel, I Schloss, G Stear, M Levin, L Bruk, P Potter, Terblanche L. Proceedings, EAACI 2006, pg.155, no.532.
11. IgE binding profile against major recombinant dust mite allergens among atopic individuals from Cape Town (South Africa), Sydney (Australia), Vienna (Austria) and Singapore. P Potter, B Fenemore, E Tovey, J Gattuso, R Hiller,

- D Krammer, A Tay, KH Yap, KN Wong, PA Lim, Tan Ching ONG⁴, Huishen SHANG⁴, Fook Tim CHEW⁴. Proceedings, EAACI 2006; pg.155, no.532.
12. Quality of life as a monitoring index and global score as an outcome index in sublingual immunotherapy for allergic rhinitis. Potter PC, Thomas H, Terblanche L. Current Allergy & Clinical Immunology, August 2006; 19(3): 161.
 13. Determination of Aspergillus Specific IgG antibodies using the Pharmacia UniCAP in airway disease. Schinkel M, Potter PC. Current Allergy & Clinical Immunology, August 2006; 19(3): 161.