

WAO Short-Term Fellowship Final Report

Name: Matteo Bonini
Project Title : Methodological tools for epidemiological and clinical studies in sports allergy
Institution: Royal Brompton Hospital, Imperial College, London
Department: Allergy and Clinical Immunology
Head of Department and Supervisor: Prof. Stephen Durham
Period of Fellowship: 07/01/2008 – 28/01/2008

Results achieved during the fellowship:

The fellowship tried to answer the two objectives indicated in the original application which addressed the WAO research priority “Clinical and basic studies in allergen and asthma:

1. Acquiring in a European Centre of Excellence the basic methodology for epidemiological and clinical studies of allergic diseases in elite athletes and non competitive exercisers.
2. Applying this knowledge in the framework of the GA²LEN Project with the final aim of establishing a harmonised protocol for the diagnosis of allergy in exercisers, as well as for outcome measures to be used in clinical trials worldwide.

The three-week Fellowship took place in the Department of Allergy and Clinical Immunology directed by Prof. Stephen Durham at the Royal Brompton Hospital, Imperial College, London.

The Fellowship was mainly focused on the methodology used for systematic reviews and meta-analysis which, at present, are not widely used in Sports Allergy. This makes it particularly difficult to pool and compare epidemiological and clinical studies performed all around the world on different samples. Specific competences were acquired in performing search strategies, extracting data and assessing quality of studies. I was also given educational tutorials on the major statistic methods available to interpret results.

To put experience acquired into practice and to test it in a “hands-on” project, after having discussed with Dr. M. Calderon which topic in Sports Allergy should call for special attention, it was decided to produce a systematic review and meta-analysis on the safety and effects on performance of beta-2 adrenergic drugs in asthmatic athletes and to submit the title to the Cochrane Review for approval.

The issue was chosen in relation to the high prevalence of asthma and other allergic diseases among athletes. Beta-2 agonists, widely and efficiently used for the treatment of

asthma, undergo restrictions by the World Anti-Doping Agency (WADA) when used in asthmatic athletes because of controversial evidence of a positive influence on physical performance. In view of these restrictions, some asthmatic athletes are not allowed to be treated according to International Guidelines. On other hand, the recently reported relationship between the administration of long acting β 2-agonists (LABA) without concomitant inhaled corticosteroids, and an increased risk of sudden deaths represents a very important safety issue for athletes with asthma, also in view of the warning of the USA Food and Drug Administration which ascribed a “black box” notification to these drugs and stressed the need for specific pharmacovigilance studies.

The proposal has been accepted by the Review Group Coordinator of the Airways Group, Prof. T. Lasserson, provided that the study will not be confined to an athlete population and will mainly focus on the efficacy of beta-2 adrenergic drugs on exercise-induced bronchoconstriction in order to better answer to the aims of the Cochrane Collaboration. The protocol of the review is at present being developed.

Short tutorials have also been attended in the Department of Respiratory Epidemiology directed by Prof. P. Burney, in order to receive education in designing epidemiological studies.

In addition, it was agreed with Dr. C. Minelli to submit a protocol to the Human Genome Epidemiology Network (HuGeNet) for developing a systematic review on the influence of the beta-2 adrenoceptor polymorphism on the response either to short- or long-acting beta adrenergic drugs. The methodological strategy of the project was chosen following the advice of two experts in epidemiological studies, Prof J. Thompson and Prof. K. Abrams, met on the occasion of an ad hoc workshop organized at Leicester University.

During the fellowship period I was offered the opportunity to give two seminars on “Physical Exercise and Immune System“ and “Mastocytosis”.

The Fellowship, apart from representing an opportunity to improve my knowledge in clinical allergy (by attending the Allergy, the Immunotherapy and the ENT Clinics), was a unique occasion to facilitate contacts with highly qualified European colleagues and establish with them collaborative projects which will certainly be useful for my future professional career.

London, February 12, 2008

Dr. Matteo Bonini