Introduction

From Bedside to Bench: The Role of Anti-Tumor Necrosis Factor Agents in the Management of Immune-Mediated Inflammatory Diseases

It has been over a decade since Health Canada approved infliximab (Remicade®, Centocor Inc.), the first tumor necrosis factor-α (TNF-α) inhibitor, for the treatment of rheumatoid arthritis (RA). The approval of etanercept (Enbrel®, Amgen Inc.) and adalimumab (Humira®, Abbott Laboratories) followed shortly after, as well as a spectrum of other indications for this new therapeutic class. These agents not only revolutionized the treatment of immune-mediated inflammatory diseases (IMID), but also contributed to our understanding of common underlying pathologies of these clinically dissimilar conditions.

Treatment with TNF-α inhibitors is not without problems. For example, there are considerable differences in the response rates among different patients. While some patients respond quickly, others may take considerably longer, and some will not respond at all to initial treatment. Further, some patients may lose their response over time. Currently there is a great deal of debate regarding the management of patients who do not respond to initial treatment (primary nonresponders) and those who subsequently lose initial response (secondary nonresponders). The suggestion that immunogenicity may play a significant role in the way patients respond requires further examination.

The chemical structure of the molecules and mode of administration of the agents appear to be implicated in both efficacy and safety. For example, while both monoclonal antibodies infliximab and adalimumab are indicated for the treatment of Crohn's disease, the fusion protein etanercept is not. Toxicities and side effects, especially malignancies and infections, associated with TNF-α inhibitors are another area of ongoing concern and postmarketing observation.

Finally, development and introduction of second-generation anti-TNF (i.e., certolizumab pegol, golimumab) is posing additional challenges and opportunities for both physicians and patients with IMID. With the availability of several different anti-TNF-α agents, more emphasis is being placed on the selection of appropriate agents for specific patient populations and/or indications. Thus, identification of specific biomarkers is becoming increasingly important.

From Bedside to Bench: The Role of Anti-TNFs in the Management of Immune-Mediated Inflammatory Diseases was a meeting organized by Canadian experts involved in the treatment of patients with IMID. The meeting provided Canadian clinicians with an opportunity to share their knowledge and expertise in the management of IMID in daily practice. The purpose of this gathering of thought leaders was to assess the diversities and commonalities of various IMID from a multidisciplinary perspective.

The aim of this supplement is to provide the reader with an in-depth overview of presentations and discussions that took place during the meeting and a comprehensive update regarding the current understanding of the pathogenesis and pathophysiology of IMID and the role of anti-TNF in the management of these highly disabling disorders.

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