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ABSTRACT

Title

Safety and Effectiveness of Vedolizumab IV in Real World Clinical Practice in Taiwan: A Registry-Based Study

Keywords

Vedolizumab IV, Ulcerative colitis, Crohn's disease

Rationale and Background

Ulcerative colitis (UC) is a chronic, relapsing, remitting inflammatory disease of the colonic mucosa and submucosa. Crohn's disease (CD) is a chronic, relapsing, remitting inflammatory disease that may involve any portion of the gastrointestinal (GI) tract, from mouth to anus, in a transmural fashion from mucosa to serosa. In Taiwan, prevalence of UC and CD from 1998 through 2008 was relatively low at 8/100,000 persons and 2/100,000 persons, respectively. However, the prevalence of both UC and CD is increasing. In North America, the highest annual prevalence for UC and CD is 249/100,000 persons and 319/100,000 persons, respectively. In Europe, the highest annual reported prevalence for UC and CD is 505/100,000 persons and 322/100,000 persons, respectively.

UC and CD are lifelong diseases that cause considerable morbidity in a relatively young patient population. Many patients experience refractory diarrhea and rectal bleeding and require frequent hospitalizations, enteral nutrition, and surgical procedures. Specifically, patients with UC often had colectomies, while many patients with CD regularly experienced fistulae, GI abscesses, and had serial bowel resections. These patients are often unable to work and live normally in the society with uncontrolled disease.

Vedolizumab is a gut-selective humanized immunoglobulin G1 monoclonal antibody (mAb) that antagonizes the adhesion of human lymphocyte integrin α4β7 to mucosal addressin cell adhesion molecule-1 (MAdCAM-1), and results in reduced trafficking of leukocytes into GI mucosa and gut-associated lymphoid tissue. By virtue of its gut-selective mechanism of action, vedolizumab is expected to have anti-inflammatory activity without the generalized immunosuppression found with other current treatments for UC and CD.

This postmarketing study is being undertaken at the request of the Taiwan Food and Drug Administration (TFDA) to provide real-world data on the safety and effectiveness of vedolizumab intravenous (IV) in Taiwanese patients.

Research Question and Objectives

- To assess the safety of vedolizumab IV in patients with ulcerative colitis or Crohn's disease in Taiwan.
- To assess the effectiveness of vedolizumab IV in patients with ulcerative colitis or Crohn's disease in Taiwan.

Study Design

This is a prospective longitudinal cohort study that analyzed the data from the Taiwan Society of Inflammatory Bowel Disease (TSIBD) Prospective Inflammatory Bowel Disease (IBD) Registry (hereinafter referred to as the Registry).

Setting

The study population is all UC and CD patients in the Registry who received at least 1 dose of vedolizumab IV during the 2.75-year period from 05 September 2017 through 28 May 2020.

Subjects and Study Size, Including Dropouts

Two hundred seventy-four patients who initiated vedolizumab IV treatment from 05 September 2017 through 28 May 2020 aged at least 18 years at time of initiating vedolizumab IV, were enrolled in the Registry. All subjects agreed to the usage of their data from the Registry are analyzed in this study.

Variables and Data Sources

The data source for the analysis is the data contained in the Registry. The Registry is a national registry of IBD patients that systematically collects longitudinal information on the clinical management, medication use, and clinical outcomes of patients with IBD from participating IBD clinics.

Results

In the total of 274 enrolled patients, most patients were male (66.1%; 181/274), had a normal BMI at the initiation of vedolizumab IV (49.3%; 135/274), no smoking history (80.7%; 221/274), no alcohol history (73.7%; 202/274), and no family history of IBD (91.6%; 251/274). In addition, 46.4% (127/274) of all patients were diagnosed as CD and 53.6% (147/274) were UC patients. 57.5% (168/274) of all patients were biologic naïve and 64.2% (176/274) of patients used steroids concurrently with the initiation of vedolizumab IV, and 57.5% (158/274) of patients used immunosuppressants at the time of initiation of vedolizumab IV.

Notably, 57.1% (32/56) and 71.4% (40/56) of CD patients responded to treatment and achieved clinical remission respectively, as well as 33.3% (11/33) of CD patients achieved steroid free remission at 12- month follow-up. 76.0% (38/50) and 58.0% (29/50) of UC patients responded to treatment and achieved clinical remission respectively; 35.0% (14/40) of UC patients achieved steroid free remission at 12-month follow-up. Furthermore, the bio-naïve CD patients had better clinical response to the vedolizumab IV. Of the total number of enrolled patients, 7.7% (21/274) discontinued vedolizumab IV treatment due to negative outcomes. During the entirety of the study, of the total 274 enrolled patient, 3 patients experienced a total of 3 serious infections (2 events in CD patients and 1 event in a UC patient), one CD patient experienced an opportunistic infection (cytomegalovirus disease), one CD patient had a hepatic viral infection (hepatitis B viral reactivation), 3 CD patients experienced three events of gastrointestinal infections, 2 UC patients experienced two events of infusion-related reactions and hypersensitivity, and 1 CD patient experienced a serious adverse event. No events of malignancies, hepatic injury, or pregnancy were reported.

Discussion

This study is a prospective real-world study to evaluate the safety and effectiveness of vedolizumab IV for CD and UC patients in Taiwan. Overall, patients with CD and UC achieved clinical response and remission with Vedolizumab treatment, 71.4% (40/56) of CD patients achieved steroid free remission and 40.5% (15/37) of UC patients achieved steroid free remission at 12- month follow-up. From the first dose of vedolizumab IV to end of study follow-up, there were a total of three events of serious infections, one event each of opportunistic infections, hepatic viral reactivation, and serious adverse events, three events of gastrointestinal infections, two events of infusion-related reactions and hypersensitivity were reported and there were no

events of malignancies, hepatic injury, and pregnancy reported. Of The 21 patients that discontinued therapy with vedolizumab IV treatment during the study due to negative outcomes, only 3 (1.2%) patients discontinued due to adverse events and the other 18 (6.9%) patients were being refractory to the treatment. Among the three patients discontinued due to adverse events, one patient reported hepatitis B reactivation however the event was considered related to dose escalation of the concomitant azathioprine during the treatment. Based on this evaluation, it can be concluded that the data of this study is comparable with previous real-world studies associated with vedolizumab in other countries.

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