

Treatment of Arthritis with Ulcerative Colitis

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Abstract: Arthritis, or joint inflammation, is the most common complication of ulcerative colitis. Twenty-five percent of people with ulcerative colitis suffer from it, and it is often found in young patients. In addition to joint pain, arthritis also causes swelling and stiffness (stiffness in the joint). With ulcerative colitis, arthritis can manifest itself in two different forms: Peripheral arthritis usually affects large joints of the hands and feet, including elbows, wrists, knees and ankles. Pain can "migrate" from one joint to another and last from a few days to several weeks. The more intense the inflammatory process in the colon, the more pronounced arthritis. To date, there are no special tests to confirm ulcerative colitis-associated arthritis. This diagnosis can be made only by eliminating other causes of pain in the joints. Fortunately, such peripheral arthritis usually does not cause a significant change in the function of the joint. Spondyloarthritis (arthritis of the intervertebral joints) causes pain and stiffness in the lower part of the spine and sacroiliac joints. In young people, these symptoms may appear much earlier than intestinal manifestations. Unlike peripheral arthritis, spondyloarthritis can lead to a significant deterioration in the function of the spine, as the amount of movement in the intervertebral joints decreases. Spondylitis usually appears at the age of about 35-45 years. In most cases, the symptoms of peripheral arthritis decrease with the disappearance of inflammation in the large intestine. After a course of drugs such as prednisolone or sulfasalazine, joint pain usually disappears. The use of Infliximab (Remicade®) for the treatment effectively reduces inflammation and swelling of the joints. Unlike peripheral arthritis, unfortunately, in spondyloarthritis there is no such clear relationship between the disappearance of signs of inflammation in the intestine and the disappearance of joint symptoms. In such patients, non-steroidal anti-inflammatory drugs (NSAIDs) are used to relieve pain and swelling of the joints. However, these drugs should be used under the supervision of a doctor, as they can provoke an exacerbation, since they irritate the intestinal mucosa. To prevent a decrease in the volume of movement in the joints it is very important to engage in exercise therapy.

Keywords: Arthritis, Ulcerative colitis, Treatment

Introduction

Arthritis, or joint inflammation, is the most common complication of ulcerative colitis. Twenty-five percent of people with ulcerative colitis suffer from it, and it is often found in young patients. In addition to joint pain, arthritis also causes swelling and stiffness (stiffness in the joint). With ulcerative colitis, arthritis can manifest itself in two different forms:

Peripheral arthritis usually affects large joints of the hands and feet, including elbows, wrists, knees and ankles. Pain can "migrate" from one joint to another and last from a few days to several weeks. The more intense the inflammatory process in the colon, the more pronounced arthritis. To date, there are no special tests to confirm ulcerative colitis-associated arthritis. This diagnosis can be made only by eliminating other causes of pain in the joints. Fortunately, such peripheral arthritis usually does not cause a significant change in the function of the joint.

Spondyloarthritis (arthritis of the intervertebral joints) causes pain and stiffness in the lower part of the spine and sacroiliac joints. In young people, these symptoms may appear much earlier than intestinal manifestations. Unlike peripheral arthritis, spondyloarthritis can lead to a significant deterioration in the function of the spine, as the amount of movement in the intervertebral joints decreases. Spondylitis usually appears at the age of about 35-45 years.

Introducing biosimilar infliximab for the treatment in rheumatology (rheumatoid arthritis and ankylosing spondylitis) and inflammatory bowel disease (ulcerative colitis) may reduce treatment costs associated with biologics. This study aimed to investigate the budget impact of adopting biosimilar infliximab in five European countries, considering that the budget impact includes the adoption of biosimilar infliximab and the availability of biologic alternatives such as vedolizumab, biosimilar etanercept, biosimilar rituximab, and other relevant factors.

Method

In this study, all adult patients receiving maintenance therapy with innovator infliximab in City Hospital and Department of Medical Academy were systematically switched to biosimilar infliximab. Effectiveness was assessed by the retention rate of biosimilar infliximab at the time of the third infusion. Sensitivity analyses for effectiveness included changes of disease activity parameters and infliximab trough levels between baseline and the last visit as well as the occurrence of adverse events leading to drug discontinuation. Factors associated with biosimilar infliximab discontinuation at the last visit were explored.

In most cases, the symptoms of peripheral arthritis decrease with the disappearance of inflammation in the large intestine. After a course of drugs such as prednisolone or sulfasalazine, joint pain usually disappears. The use of Infliximab (Remicade®) for the treatment effectively reduces inflammation and swelling of the joints. Unlike peripheral arthritis, unfortunately, in spondyloarthritis there is no such clear relationship between the disappearance of signs of inflammation in the intestine and the disappearance of joint symptoms.

An existing budget impact model was adapted to forecast the budget impact in the more countries. Respondents in a Delphi panel, conducted in 2015 and consisting of several leading rheumatologists and gastroenterologists from different nationalities, were asked to forecast uptake of biosimilar infliximab and estimate the proportion of patients eligible for a particular type of biological treatment, including biosimilar infliximab. Scenario analyses assessed the influence of various factors, including price reductions, on the budget.

Results and Discussion

In such patients, non-steroidal anti-inflammatory drugs (NSAIDs) are used to relieve pain and swelling of the joints. However, these drugs should be used under the supervision of a doctor, as they can provoke an exacerbation, since they irritate the intestinal mucosa.

A total of patients fulfilled the inclusion criteria, including rheumatoid arthritis, axial spondyloarthritis and inflammatory bowel diseases. The retention rate was 80% at the time of the third biosimilar infusion. Between baseline and the last visit, 20% patients discontinued biosimilar infliximab, mainly due to experienced inefficacy. No clinical or biological factors were associated with biosimilar discontinuation. No serious adverse events occurred. No change in objective disease activity parameters or infliximab trough levels was detected. Uptake of biosimilar infliximab was particularly expected for naïve patients; switching patients that already received other biologics was not expected much. Market shares after 5 years of biosimilar infliximab were 2% in rheumatology in countries and in gastroenterology ranged from 4% to 30%. Budgets were expected to decrease for rheumatologic diseases. For gastroenterology, budgets were expected to decrease in other countries. Budgets were expected to increase substantially, due to the introduction of vedolizumab in the studied period. Budget was expected to slightly increase for ankylosing spondylitis and ulcerative colitis. Savings in budget were expected in all countries, for all diseases, when larger price discounts on biosimilar infliximab were used.

Conclusion

To prevent a decrease in the volume of movement in the joints it is very important to engage in exercise therapy.

No changes in drug trough levels or objective parameters were observed after the systematic switch to biosimilar infliximab in a real clinical practice setting. Only changes in patient-reported outcomes were observed, suggesting attribution effects rather than pharmacological differences. This study has shown that only when price reductions are large enough (i.e., 50% or more), physicians indicated that they will prescribe biosimilars. Policy makers should ensure substantial price reductions and stimulate physicians to use biosimilar products, to obtain savings in healthcare budgets.

References

- Brodzsky V., Baji P., Balogh O., Péntek M. (2014). Budget impact analysis of biosimilar infliximab (CT-P13) for the treatment of rheumatoid arthritis in six Central and Eastern European countries. *Eur. J. Health Econ.* 15(Suppl. 1), S65–S71. 10.1007/s10198-014-0595-3 [[PMC free article](#)][[PubMed](#)] [[Cross Ref](#)]
- Cooksey R., Husain M. J., Brophy S., Davies H., Rahman M. A., Atkinson M. D., et al. . (2015). The cost of Ankylosing Spondylitis in the UK using linked routine and patient-reported survey data. *PLoS ONE* 10:e0126105. 10.1371/journal.pone.0126105 [[PMC free article](#)] [[PubMed](#)] [[Cross Ref](#)]
- Danese S., Gomollon F. (2013). Governing board and operational board of ECCO. ECCO position statement: the use of biosimilar medicines in the treatment of inflammatory bowel disease (IBD). *J. Crohns. Colitis* 7, 586–589. 10.1016/j.crohns.2013.03.011 [[PubMed](#)] [[Cross Ref](#)]
- Dignass A., Lindsay J. O., Sturm A., Windsor A., Colombel J. F., Allez M., et al. . (2012). Second European evidence-based consensus on the diagnosis and management of ulcerative colitis part 2: current management. *J. Crohns. Colitis* 6, 991–1030. 10.1016/j.crohns.2012.09.002 [[PubMed](#)][[Cross Ref](#)]
- Dörner T., Kay J. (2015). Biosimilars in rheumatology: current perspectives and lessons learnt. *Nat. Rev. Rheumatol.* 11, 713–724. 10.1038/nrrheum.2015.110 [[PubMed](#)] [[Cross Ref](#)]
- Fautrel B., Woronoff-Lemsi M. C., Ethgen M., Fein E., Monnet P., Sibilia J., et al. . (2005). Impact of medical practices on the costs of management of rheumatoid arthritis by anti-TNF α biological therapy in France. *Joint Bone Spine* 72, 550–556. 10.1016/j.jbspin.2004.12.009 [[PubMed](#)][[Cross Ref](#)]

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