ADVANCES IN IBS

Current Developments in the Treatment of Irritable Bowel Syndrome

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Cost-Effective Treatments for Irritable Bowel Syndrome

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G&H What pharmacologic treatments currently exist for irritable bowel syndrome?

ES Irritable bowel syndrome (IBS) is a heterogeneous disorder with several established mechanisms of disease, including abnormal brain-gut interactions, small intestinal bacterial overgrowth, alterations in the intestinal microbiome, and visceral hypersensitivity. Treatment development efforts in the past 2 decades have been successful toward addressing each of these disease mechanisms, leading to no fewer than 8 on-label drugs approved by the US Food and Drug Administration for managing diarrhea-predominant IBS (IBS-D) and constipation-predominant IBS. Psychological interventions, including cognitive behavioral therapy and hypnotherapy, as well as dietary strategies (eg, a diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols) can be delivered alone or in combination with other treatments, potentially allowing clinicians to target different aspects of the disease. These treatments for IBS have data showing sufficient efficacy, safety, and tolerability, and are recommended for use in clinical practice guidelines.

G&H What is the significance of using biomarkers in IBS?

ES IBS is the most common condition seen by gastroenterologists. It affects between 30 and 35 million Americans, accounts for up to 40% of referrals to gastroenterologists, and makes up 10% to 15% of visits to primary care providers. There are fewer than 10 symptom domains within the Patient-Reported Outcomes Measurement Information System gastrointestinal symptom scales. Only 2 of those domains—abdominal pain and either diarrhea or constipation—define IBS. It is likely that various diseases cause the same set of symptoms, and not all of the individuals with these symptoms

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have the same disease. Although many treatments exist, there is currently no test to determine which treatment should be used for which patient. Biomarkers present the opportunity to evaluate a set of symptoms and guide general gastroenterologists and primary care providers to the appropriate treatment. This is significant given the number of patients with IBS compared to the relatively few expert centers available.

G&H What are the economic consequences of using biomarkers?

ES The potential cost of a biomarker should be based on its ability to match patients to their specific mechanism of disease.

For bacterial overgrowth, a blood biomarker (antibodies to cytolethal distending toxin B) has been developed and is commercially available. Breath testing, which measures hydrogen and methane content in the breath after patients ingest a standard load of a carbohydrate, is also available. A study by Dr Ali Rezaie and colleagues that was recently published in *The American Journal of Gastroenterology* showed that breath testing can predict outcomes with rifaximin (Xifaxan, Salix) in patients with IBS-D. Thus, there are now biomarkers that can target bacterial overgrowth and potentially help predict what might be appropriate for receiving rifaximin. The economic value of using the biomarker depends on the cost of rifaximin compared to the cost of alternative treatment and on the ability of the biomarker to move patients from inappropriate use of usual care toward rifaximin (or vice versa).

G&H At what cost and level of accuracy does a biomarker-based test become cost-effective?

ES Dr Christopher V. Almario and colleagues published a study in *Clinical Gastroenterology and Hepatology* that investigated the cost-effectiveness of biomarker-based tests. The 2 factors—cost and level of accuracy—are dependent on each other. The payment threshold, or the maximum potential tolerated price from a payer perspective, depends on both the cost savings that the payer can achieve by using the biomarker as well as the accuracy of the test. Providers and patients want a test to be as accurate as possible. A more accurate test can be priced higher and, to a certain extent, payers will accept it. The authors found that a biomarker-based test priced at more than $846 is no longer cost-effective, even if the test has 100% accuracy in detecting IBS-D.

G&H What were the key findings of your recent study on rifaximin for IBS-D?

ES My colleagues and I have recently evaluated the routine use of rifaximin from a payer perspective to understand what might be driving payer coverage barriers to this effective therapy. We used rifaximin as an example, understanding that several safe and effective therapies have also been approved in just the last few years. We modeled 3 different levels of payer coverage that are common in practice: (1) coverage without any restrictions or barriers, (2) restricted coverage (such as a formulary, step therapy requirement, or prior authorization requirement), and (3) no coverage at all. The main takeaway was that value-based discounts for rifaximin could improve access to this effective therapy in managing one of the most common gastrointestinal conditions—especially for patients who have failed standard general IBS measures.

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With this line of research, we are trying to change the paradigm so that primary care providers can more sensibly approach a common disease on a routine basis and provide high-value care through the appropriate use of new treatment options. Equally, we want gastroenterologists to be able to access seemingly expensive but highly efficacious treatments for their patient based on their expert knowledge and training without getting denied by insurance. These efforts require data to drive decision-making, such as what we showed in our recent study.

G&H What were the limitations of this study?

ES The assumptions in the model are driven by national datasets and need to be tailored to local circumstances. The datasets do not provide a yardstick under which rifaximin must be priced, but instead provide a model to understand these concepts. Notably, the market-based prices we list are acquisition costs at retail pharmacies across the United States. These costs do not include manufacturer rebates and discounts, which bring down

the price. Unfortunately, accurate post-rebate data are not publicly or widely available. Ultimately, our value-based prices suggest what could accurately be the after-rebate average price.

G&H Are any cost-effectiveness studies on treatments for IBS currently being performed?

ES Definitely; this is my ongoing area of research. The goal in pursuing this line of work is to try to help patients gain access to the treatments they need with fewer barriers so that they can achieve better health outcomes, while also considering the high cost of care in managing the most common disease in gastroenterology.

Dr Shah has no relevant conflicts of interest to disclose.

Suggested Reading

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