measurement of patient autoantibodies by enzyme-linked immunosorbent assay (ELISA) to identify candidates for confirmatory intestinal biopsy (9). Testing usually begins with serum tissue transglutaminase (TTG) antibodies, most commonly the IgA subtype. While anti-TTG-IgA is >90% sensitive for CD, this biomarker is not useful in patients with selective IgA deficiency (i.e. patients with extremely low or nonexistent IgA concentrations via immunonephelometry). In this subset of patients TTG IgG antibody testing is more appropriate. In patients already consuming a gluten-free diet, the positivity rate on serologic tests will be diminished. Here, initial testing for expression of DQ2 or DQ8, HLA markers that confer genetic susceptibility for CD, is an effective way to rule out CD if the immunogenotype is not identified.

Non-celiac gluten sensitivity (NCGS), formerly called gluten intolerance, also causes symptoms suggestive of IBS with diarrhea (IBS-D) (10). Similar to those with CD, NCGS patients sometimes experience increased stool frequency after they ingest gluten. However, they do not develop CD’s characteristic serum antibodies or duodenal mucosa lesions. Importantly, there are no NCGS-specific laboratory tests, and NCGS also does not have the same dependence on genetic susceptibility as CD, as only 50% of NCGS patients express HLA DQ2 or HLA DQ8. While this genetic prevalence is higher than that observed in the general population (~30%) this NCGS genetic connection pales in comparison with that of patients with CD (>97%). Therefore, clinicians identify NCGS through negative serologic CD tests and by patients’ symptoms lessening after they implement gluten-free diets.

Scenarios in which all the above considerations are excluded
After a physician excludes other causes of chronic diarrhea he or she is left with the diagnosis of IBS-D. The pathophysiology of IBS-D is not well understood, but the symptoms traditionally have been assumed to be psychogenic along with some abnormalities of the gut smooth muscle, visceral hypersensitivity, and hypervigilance of the central nervous system—all of which are difficult to treat directly. Many IBS-D treatment options take a “try it and see” approach to symptom reduction (e.g. probiotics, opioid receptor antagonists, tri-cyclic antidepressants, antispasmodic drugs, etc.) without any patient preselection. However, recent efforts to subcategorize IBS-D patients into treatable populations have shown some success (12, 13).

Bile acid diarrhea: Approximately 25% of patients with IBS-D have excess bile acids in their stool, termed bile acid diarrhea (BAD) (14). The liver synthesizes and releases bile acids into the stomach where they solubilize dietary fats and facilitate lipid absorption in the small intestine. The primary bile acids—chenodeoxycholic acid and cholic acid—are reabsorbed by active transport in the terminal ileum: Microbiota

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