JAMES H. TABIBIAN, MD, PhD
Division of Gastroenterology
Department of Medicine
Olive View-UCLA Medical Center
Geffen School of Medicine at UCLA
Sylmar, California

References

1. Shi HY, et al. Clin Gastroenterol Hepatol 2018;16:190–197.
2. Kaplan GG. Nat Rev Gastroenterol Hepatol 2015;12:720–727.
3. Suh M, et al. Cancer Res Treat 2017;49:798–806.
4. Sewell JL, et al. Inflamm Bowel Dis 2013;19:627–643.
5. Jung YS, et al. Dig Dis Sci 2017;62:2102–2112.
6. Office of Management and Budget. Federal Register 1997; 62:36874–36946.
7. Bhopal R, et al. Am J Public Health 1998;88:1303–1307.
8. Biancheri P. Trends Immunol 2013;34:564–571.

Conflicts of interest
The authors disclose no conflicts.

Most current article
https://doi.org/10.1016/j.cgh.2018.03.001

Reply. We welcome the interest by Fung et al[1] in our systematic review and meta-analysis on the impact of race and ethnicity on phenotype and outcomes in patients with inflammatory bowel diseases (IBD) (Crohn's disease, ulcerative colitis) published in this journal.[2] They raise a few different points. First, they suggest that the higher frequency of upper gastrointestinal tract involvement in Crohn's disease in Asian population may be due to greater use of upper gastrointestinal endoscopies in Asia compared with Western populations. Although ascertainment bias due to differential utilization of diagnostic procedures may be a contributing factor, this is unlikely to be the sole explanation because this finding was noted more commonly in countries where there is no routine screening for gastric cancer (such as from the Middle East). In addition, wider use of cross-sectional imaging studies in the West may indeed skew the estimate in the opposite direction. They also suggest that the lower rates of surgery among Asian IBD patients may reflect cultural preferences rather than truly reflect disease course. Although we certainly acknowledge that both patient and physician preference for surgery may influence the rates of IBD-related surgery in any population, a lower rate of surgery was also noted in immigrant Asian populations (when compared with Whites), suggesting that prevalent preference for surgery or access to care may not be the sole determinant of the differences observed.

We appreciate their observations about the perceived differences between the IBD phenotype and natural history in the non-white Latino population in their hospital compared with Whites. Although tertiary referral center–based studies may not be reflective of the natural history of disease in population-based cohorts, we certainly welcome all observations on racial and ethnic differences in disease presentation and outcomes in diverse settings and support their call for further population-based studies in understudied populations. Finally, we also agree with the need to further examine the contribution of both genetic and environmental factors to accurately determine the architecture of IBD in diverse populations.

ASHWIN N. ANANTHAKRISHNAN, MD, MPH
Division of Gastroenterology
Massachusetts General Hospital
Boston, Massachusetts
Harvard Medical School
Boston, Massachusetts

SIEW C. NG, MBBS (Lond), PhD (Lond), MRCP (UK)
Department of Medicine and Therapeutics
Institute of Digestive Disease
State Key Laboratory of Digestive Disease
LKS Institute of Health Sciences
The Chinese University of Hong Kong
Hong Kong

References

1. Fung BM, et al. Clin Gastroenterol Hepatol 2018.
2. Shi HY, et al. Clin Gastroenterol Hepatol 2018;16:190–197 e11.

Conflicts of interest
Dr Ananthakrishnan is supported by funding from the Crohn's and Colitis Foundation, has served on scientific advisory boards for AbbVie, Merck, and Exact Sciences, and has received research funding from Merck, Amgen, and Pfizer. Dr Ng has received research funding from AbbVie, Ferring, Janssen, and Takeda.

Most current article
https://doi.org/10.1016/j.cgh.2018.03.015

On the Visual Diagnosis of Human Taeniasis by Capsule Endoscopy

Dear Editor:

Le Mouel et al[1] recently identified a case of human taeniasis caused by *Taenia saginata* by means of third-generation capsule endoscopy. The authors of the article provide 4 illustrative images of the tapeworm and, specifically, gravid proglottids containing a branched uterus are shown. Because after endoscopy no additional confirmatory diagnostic method is specified, we reckon that the images of this branched uterus were meaningful enough for the specific tapeworm identification. Capsule endoscopy is a diagnostic method with high sensitivity. However, this visual technique lacks specificity and makes the differential diagnosis among the *Taenia* species that can cause the disease impossible.[2]

Human taeniasis can be caused by 3 species of the *Taenia* genus: *T solium*, *T saginata*, and *T asiatica*. Humans are the definitive hosts of these intestinal tapeworms, whereas pigs, in the cases of *T solium* and

T asiatica, and cattle, in the case of *T saginata*, are the intermediate ones. Accordingly, intestinal taeniasis is acquired by the ingestion of raw/undercooked pork or beef, respectively, containing the infective larval stage, the cysticercus. Therefore, if pork and beef are presumably included in the patient's diet, the tapeworm causing the parasitation could belong to any of these 3 species.

Although *T asiatica* has not been detected out of Asian countries so far, the other 2 species are cosmopolitan. According to the information given in the article, the patient was French and she had never left France, a European country where *T solium* and *T saginata* are present.[3] Concerning *T asiatica*, the fact that the patient had never left France does not prevent the acquisition of an endemic parasite of countries thousands of kilometers away from France. In fact, there was a case of human diplogonoporiasis, caused by an intestinal tapeworm exclusively from Asia, in a Spanish patient who had never left Spain. However, the man used to eat imported sardines (the intermediate host) that harbored the infective larvae of this tapeworm of whales.[4] Therefore, parasites whose infective stages live in intermediate hosts included in the human diet, can be acquired far from their endemic areas as long as their intermediate hosts are included in international trade. These moving parasite stages can be considered "traveling infected stages." By contrast, people from nonendemic countries acquire parasites with "nontraveling infective stages" exclusively if they are present in the endemic countries. Some examples of the latter are schistosomiasis, strongyloidiasis, or hookworm infections, parasitic diseases with free infective larvae that actively penetrate the human skin. These epidemiologic features of parasite life cycles are of considerable value in the diagnosis.

In the reported case by Le Mouel et al,[1] the specific diagnosis of the intestinal tapeworm was based on the uterus morphology. However, all 3 human *Taenia* species have this type of branched uterus. That is why an additional more specific diagnostic method would be required for an accurate identification. Although the treatment is the same for the 3 tapeworms, it is essential to determine the species involved in human taeniasis because of the fact that, in particular, *T solium* can lead to another dangerous disorder. The accidental ingestion of the eggs shed by the carrier of the intestinal adult stage can provoke cysticercosis, which is the presence of the *T solium* cysticerci either in several tissues (disseminated cysticercosis), in eyes (oftalmocysticercosis), and/or the central nervous system (neurocysticercosis), this last location sometimes being fatal. Up to 40% of patients harboring intestinal *T solium* also show some type of cysticercosis even though they might, thus far, not experience any particular symptom. In addition, *T solium* carriers may pose a risk for people surrounding them, who might also ingest the eggs.

Because the eggs of the 3 species have the same morphology, the differential diagnosis based on morphology consists of performing a detailed study of the uterus to count the number of lateral uterine branches, because *T solium* usually has fewer lateral branches (7–16) than *T saginata* (14–32) and *T asiatica* (11–32).[3] *T saginata* and *T asiatica* have practically the same number of uterine branches. As a consequence, only molecular methods (eg, multiplex polymerase chain reaction or loop-mediated isothermal amplification method) are currently capable of distinguishing the 3 *Taenia* species.[5,6]

Capsule endoscopy is a sensitive technique that allows, exclusively, the identification of *Taenia* tapeworms at genus level.[2,7] Therefore, subsequent specific diagnostic methods are recommended to confirm the species involved in this intestinal parasitic disease.[8]

MARIA TERESA GALÁN-PUCHADES, PhD
MÀRIUS V. FUENTES, PhD
Parasites & Health Research Group
Department of Parasitology, Faculty of Pharmacy
University of Valencia
Valencia, Spain

References

1. Le Mouel JP, et al. Clin Gastroenterol Hepatol 2018.
2. Galán-Puchades MT, et al. Gastrointest Endosc 2010;72:903.
3. Aammarchi L, et al. Trop Med Int Health 2017;22:881–894.
4. Clavel A, et al. Am J Trop Med Hyg 1997;57:317–320.
5. Jeon HK, et al. Exp Parasitol 2009;121:151–156.
6. Nkouawa A, et al. J Clin Microbiol 2009;47:168–174.
7. Carretero C, et al. Clin Gastroenterol Hepatol 2010;8:A36.
8. Martines H, et al. Endoscopy 2006;38(Suppl 2):E35.

Conflicts of interest
The authors disclose no conflicts.

Most current article

https://doi.org/10.1016/j.cgh.2018.02.044