

## Incidence and prevalence of Barrett's esophagus in Mexico

The change that occurs in the normal squamous epithelium of the esophagus into a columnar epithelium with presence of goblet cells is called Barrett's esophagus (BE). It is thought that this type of metaplasia takes place as a consequence of the chronic exposure of the esophagus to acid reflux. BE is the most important isolated risk factor for esophageal adenocarcinoma. Despite this, the metaplasia will progress to dysplasia in only a small percentage of persons with BE, and dysplasia will progress to adenocarcinoma in only an even smaller percentage of persons. There is epidemiologic evidence that chronic exposure to acid increases the risk for development of esophageal adenocarcinoma.<sup>1</sup>

It has been estimated that in the entirety of individuals in whom an upper gastrointestinal tract endoscopy for reflux symptoms is conducted, 10-14% will be found to have BE;<sup>2</sup> however, if endoscopy is carried out for whatever indication, the prevalence found of BE diminishes to 1% or less. Incidence of BE has been noted as increasing from the decade of the 1970s, which can be explained in part by the unquestionable increase in the number of diagnostic endoscopies carried out at present, as well as the inclusion of short-segment Barrett's esophagus in the classification of BE, this type apparently more frequent than long-segment BE. Despite this increase in incidence, studies conducted on autopsies demonstrate that the majority of cases of BE are not detected in the general population and it is estimated that for each known case of BE, 20 remain undiagnosed.<sup>3</sup> In addition, it has been found that in 95% of diagnosed cases of esophageal adenocarcinoma, there is no antecedent of the person having been diagnosed with BE. It has been speculated that BE develops on average 10-20 years before being diagnosed and that the average age of subjects at the moment of diagnosis is only a little younger than the age of patients in whom BE-associated adenocarcinoma is diagnosed.

In the Anglo-Saxon literature, it has been reported that BE is a disease that predominates in White males and that the prevalence of BE increases with age until it reaches a plateau in the seventh or eighth decade of life. It is estimated that the average age for development of BE is 40 years, but that average age at diagnosis is 63 years, which suggests that this condition can remain undiagnosed for a period of 20 years or more; nonetheless, patients with BE develop symptoms of reflux at earlier ages,

time of duration of symptoms is longer, symptoms are more severe, especially nocturnal symptoms, and these persons are at a greater risk of developing complications related with reflux such as stenosis, esophageal ulcers, and hemorrhage. Thus, we are able to say that symptom initiation at an early age, with long duration of symptoms, presence of nocturnal symptoms, and appearance of complications can be high-risk markers that have also been shown as associated with esophageal adenocarcinoma. Despite these observations, the majority of patients with BE present symptoms that are not different from those found in patients with gastroesophageal reflux disease (GERD) not complicated with columnar metaplasia. Additionally, it has been observed that despite the fact that between 10 and 15% of subjects with GERD have BE, neither frequency nor severity of reflux symptoms correlate with presence of BE.

Unfortunately, we do not know what occurs with respect to Mexico; for example, we do not know what percentage of the adult Mexican population experience reflux symptoms once a month, once a week, or daily. Also unknown is the prevalence of BE in open population, as well as the incidence of esophageal adenocarcinoma. We suppose that, as occurs in other countries, the most frequent primary cancer of the esophagus at present is adenocarcinoma and not squamous-cell carcinoma.

Based on studies carried out in other countries and taking into account results reported on the prevalence of BE in terms of the probability of progression to adenocarcinoma of the esophagus and in terms of the time necessary for this progression, the cost of controlled clinical trials for screening and surveillance of BE would be prohibitive. Nevertheless, we are able to conduct epidemiologic, observational, and case-control studies in our environment to know a little more concerning the epidemiologic behavior of this entity in Mexico.

In the issue of the *Revista de Gastroenterología de México*, two works are presented on the prevalence and risk factors of BE in Mexican population. In the study of Del Trujillo et al.,<sup>4</sup> the authors analyze the relationship between symptomatic GERD and BE. These investigators report on 109 consecutive patients submitted to upper digestive tract endoscopy and to whom the Carlson-Dent questionnaire had been administered previously for the purpose of dividing the patients into those with and those without reflux symptoms (37.6 vs. 62.4%, res-

pectively). Prevalence of BE diagnosed endoscopically and histologically was 9.7 vs. 9.6%, respectively. It has already been reported that many patients with BE present decrease of esophageal sensitivity to acid perfusion. In this issue, Del Trujillo et al. make reference to the various hypotheses proposed for this hypersensitivity, and mention that the mechanism responsible for this sensitivity has not been completely elucidated. However, we should bear in mind the fact that prevalence of BE increases with age, and that at a more advanced age the possibility of these persons to experience less sensitivity in the esophagus is greater. Despite these considerations, I note that prevalence of BE in adult population of both genders and without symptoms of GERD in the study carried out at the Centro Médico Nacional La Raza is sufficiently elevated (9.6%), much more so than the one reported in other countries (< 1%), and what is even more noteworthy is the fact that this is nearly equal to that of symptomatic patients detected by means of the Carlson-Dent questionnaire.

On the other hand, in the same study the authors mention that among risk factors associated with BE in this group of Mexican adults, presence of hiatal hernia is found in first place, detected in 90% of patients with BE and in 42% of subjects without BE. Notwithstanding this, even more important was the finding related with time of evolution of the gastroesophageal reflux symptoms, with an average of 14.7 years in patients with BE and 7 years in subjects without BE ( $p = 0.018$ ); these two findings do agree with what has been observed by authors in other countries. In the text of the article, we find no data related with patient age and gender, but the authors do mention at the end of the conclusions section that they did not observe greater association of BE with male gender or higher patient age, this noteworthy because as mentioned initially male gender and more advanced age are factors constantly associated with BE by other authors and in different countries. Despite the fact that the authors conclude that in this study no association was found between BE and GERD, I believe that the fact of detecting that the majority of patients with Barrett's esophagus (90%) had hiatal hernia and that time of evolution of gastroesophageal reflux in patients with BE was significantly higher than in subjects without BE does establish an association between both entities. What the authors do demonstrate and what is very important is the fact of detecting an important number of asymptomatic subjects with BE.

The other work published in this issue<sup>5</sup> is a case-control study whose main objective was to determine pre-

valence of BE in non-selected patients submitted to esophagogastroduodenoscopy (EGD), as well as to identify the associated risk factors. Over a period of 30 months, the authors conducted a total of 4,987 EGDs and detected a total of 13 cases of BE, that is, a global frequency of 0.26%, extremely low in comparison with the previously mentioned study and the frequency reported in the literature. Seventy percent of cases of BE found were short-segment, and a greater number of these were found in males (9 of 13). Despite not reaching a statistically significant difference between both groups with regard to age, patients with BE tended to be older than control patients with erosive esophagitis.

Another finding that differs with the previously mentioned study is that in this group of subjects the authors observed no association between hiatal hernia and BE; nonetheless, in subjects with BE with associated hiatal hernia, this hernia was significantly longer than hernias in control subjects. The only risk factor analyzed by the authors in the two studies and that was found present in the populations of both studies carried out in Mexico is time of evolution of symptoms, which showed to be significantly longer in subjects with BE; this suggests to us that when the classical symptoms of esophageal reflux of long duration (> 5 years) exist, there is a higher risk for developing BE.

What can we conclude from these two studies? In the first place, we can conclude that frequency of BE in Mexico in subjects submitted to EGD for any indication oscillates between 0.26 and 9.2%. Secondly, we can conclude that the presence of symptoms of GERD of long evolution is a risk factor for developing BE, as is being a carrier of a large hiatal hernia. With the results of these two works, we cannot know whether, as occurs in other countries, BE is more frequent in males and can know to an even lesser degree the differences that exist with regard to prevalence according with the different ethnic groups that comprise our Mexican population.

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