Gastroesophageal reflux disease. Part IV.

Return to the bosom of science

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In the last 30–40 years, tremendous changes have taken place in gastroenterology. I propose to analyze them to understand how scientific they are, and therefore useful for patients. First of all, I want to recall the basic principles of scientific knowledge, the non-observance of which led to what we have today.

Basic principles of scientific research. 1) Any research should not contradict common sense. The human body is an amazing example of expediency and knowledge of this principle can indicate the direction of research. 2) If even a single reliable scientific fact contradicts a working hypothesis, this hypothesis must be revised or completely rejected. 3) An opinion that does not have documentary support is not scientific fact and is not accepted as evidence, despite the number of supporters. 4) Based on the previous principle, no collective statements (Rome criteria, Lyon consensus, and Chicago classification) are accepted as scientific works. 5) Scientific discussion contributes to the development of science. Consensus is a way of suppressing discussion. 6) Scientific papers are judged on the quality of scientific research, not the number of papers published by these authors.

Secondly, usually, medical practice gives an order for the improvement of equipment. The situation in gastroenterology is the opposite. Manufacturers of diagnostic equipment offer equipment to practitioners and together with them participate in promoting it to a wide market, neglecting scientific principles.

The Montreal definition of GERD was adopted at the final vote was conducted on a 6-point scale and consensus was defined a priori as agreement by two-thirds of the participants. GERD is a condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications [1].

If the theory of relativity by Albert Einstein had been discussed by physicists of different countries after its publication in 1905, then it would certainly have been rejected by a majority of votes. It has been repeatedly tested and is currently considered the main theory.

The history of the Montreal definition of GERD confirms that scientific questions cannot be decided by voting. Consensus kills discussion, without which the development of science is impossible. As numerous studies have shown that in many patients with GERD, the disease proceeds, and progresses, despite the absence of troublesome symptoms and/or complications [2,3,4,5]. This means

that the minority (1/3 of those who voted against in Montreal) was right. A lot of time has passed since then (2006). The Lyon consensus [6] and several Chicago classifications [7] have been published. However, despite strong evidence that the Montreal definition of GERD was wrong, it has not been modified and was built into the modern recommendations.

The development of pH monitoring was carried out in accordance with the misconceptions about the essence of GERD, embedded in its definition. In the development of a new diagnostic method, the main step is to accurately determine the boundaries of the norm. To do this, the results of the study obtained by the new method are compared with the results of studies that make it possible to exclude pathology as accurately as possible in the control group.

A group of practitioners led by T. R. DeMeester pioneered the implementation of esophageal pH monitoring. A start was made in 1975 when twenty-four-hour pH monitoring of the distal esophagus was applied to examine fifteen normal volunteers without symptoms of gastroesophageal reflux [8]. In 1976, the same fifteen asymptomatic volunteers were used to determine the limit of the norm. "It is concluded that minimal reflux is physiological" [9].

Thus, individuals who considered themselves healthy were selected for the control group. They did not undergo gastroscopy, which, for example, revealed GERD in 15% of "healthy" Koreans [2], a histological examination that reveals signs of inflammation [10], and/or cardiac metaplasia [11], in cases where a simple overview during endoscopy does not reveal pathology. A manometric study that detects decreased tone and shortening of the LES in GERD has been available but not done [12]. Also, an x-ray study was not performed, which allows for determining the width of the esophagus, detecting, and measuring the width of the ampulla, the length of the LES, and determining the response of the LES to an increase in gastric pressure [13]. There was no study to determine the hypersecretion of hydrochloric acid too [14].

About forty years have passed since the limits of the norm (DeMeester score) were published. Numerous articles have shown that 15% to 30% of patients with GERD are not diagnosed with pH monitoring [15,16,17,18], including cases where patients needed surgical treatment [19]. In a systematic review of the literature evaluating the diagnostic accuracy of commonly used diagnostic tests, including pH monitoring, it was found that "The range of reported sensitivity and specificity was broad and unreliable because of poor methodological quality", from which it was concluded that "Diagnostic accuracy of tests in children suspected of GERD remains unclear and implications for practice are hard to give" [20].

The above facts show that pH monitoring is designed in violation of all scientific principles. The control group, supposedly healthy individuals, included patients with GERD, in whom the disease was asymptomatic or with non-troublesome symptoms or non-typical symptoms (heartburn and regurgitation). Therefore, firstly, it has no scientific value, since conclusions made on a false basis (the possibility of physiological reflux, hypersensitive esophagus, functional heartburn, hiatal hernia without GERD, etc.) lose all meaning. Secondly, it diagnoses only severe forms of GERD, because of which about 30% of patients with a milder form of GERD do not receive pathogenetic treatment in a timely manner.

Lyon Consensus

"The Lyon Consensus evaluated GERD diagnostic tests ... as being adequate to establish or refute a GERD diagnosis or inconclusive in the absence of additional supportive evidence" [6]. In this work, which makes recommendations for the diagnosis of GERD, there is no evidence at all. The determination of the validity of pH monitoring could only be accepted if a more accurate method was used for verification. The validity of pH monitoring cannot be assessed on the basis of symptoms, as "The association of gastroesophageal acid exposure with patients symptoms is week" [21,22]. However, if this fact is recognized by the Lyon Consensus [6], then the normal criteria for pH monitoring and HRM, which were determined in a group of controls selected based on the absence of typical symptoms of GERD, should be considered false.

This means that the only quantitative limits of the GERD propose by the Lyon Consensus are undoubtedly false, including:

(a) AET <4% be considered definitively normal (physiological) and >6% be considered definitively abnormal with intermediate values between these limits being inconclusive.

(b) that >80 reflux episodes per 24 hours are definitively abnormal, while a number <40 is physiological and intermediate values inconclusive.

In all my patients who underwent pH monitoring and HRM, the results of the studies were inconsistent with the clinical findings and their fallacy was confirmed by long-term results.

HRM registers the manometric characteristics of the esophagus and LES, but not the disease, which is characterized by etiological, pathophysiological, and pathogenetic features. As shown above, the limits of the norm were developed during the examination of patients without complaints characteristic of GERD, which lead to erroneous results. Different types of manometric indicators differ

in characteristics that have no physiological significance and were approved by vote as achalasia of the esophagus, jackhammer, diffuse spasm of the esophagus, and outflow obstruction based on the subjective views of the majority, correlating manometric indicators with symptoms. In fact, we are talking about different stages of GERD, where different degrees and prevalence of the inflammatory process differ from each other in terms of manometric characteristics.

For example, in the article by Kumar et al “Studies were conducted in 14 patients (age range: 40–74 yrs.) who had undergone intrasphincteric injection of Botox for the treatment of achalasia esophagus and other spastic esophageal motor disorders (nutcracker, jackhammer, diffuse esophageal spasm, and outflow obstruction). All patients had bothersome dysphagia and chest pain as their major symptoms [23]". Оказалось, что только "Nine (64%) of the 14 subjects did not complain of GER symptoms before the Botox injection. Seven of these 9 subjects developed GER symptoms at the 2–4 wk evaluation».

All the symptoms described by the authors are characteristic of GERD. (1) Surprisingly, the authors who co-authored the Chicago Classification did not use pH monitoring to rule out reflux disease. (2) It turned out that for treatment it is not at all important what manometric disorder was in each case. (3) And despite the worsening of symptoms in almost all patients, the authors are satisfied with the result of their work and promote this method in journal articles [23, 24].

It should be noted that the harm of intrasphincteric injection of the Botox into the lower esophageal sphincter is not as great as LES incision. Because Botox works for 3-6 months, and during POEM (per-oral endoscopic myotomy), not only the LES, but also part of the esophagus is cut, which leads to irreversible damage to the anti-reflux function of the LES, and, ultimately, causes the need for a fundoplication [25]. Pre- and post-POEM endoscopy showed esophagitis in 0% and 19% of patients, respectively [26]. However, it is known that endoscopy reveals only severe forms of GERD. From this, it follows that in fact, GERD occurs many times more often.

It is probably easy to convince a patient to agree to surgery if he has been suffering from severe GERD for a long time, despite long-term use of high doses of PPI. However, “Long-term gastric acid suppression leads to hypochlorhydria and hypergastrinemia. Regardless of the etiology, HCl suppression modifies physiological feedback inhibition. It is generally believed that the serum gastrin concentration increases 2 to 4 times after 2 weeks of treatment with PPIs. In chronic treatment, it raises 3 to 4 times the baseline level through the first 1 to 2 months and then stabilizes or shows a discrete downturn. Typically, hypergastrinemia does not exceed 5 times the upper limit. Nevertheless, serum

gastrin concentrations exceed 500 pg/ml in 3% of PPI users" [27]. Thus, in some patients with GERD, PPI drugs that reduce HCL secretion leads to a significant increase in gastrin, which causes hypersecretion of HCL, i.e., the leveling of the therapeutic effect.

Squaw status

The above analysis, including "GERD. Parts 1,2,3", shows that the use of pH monitoring and HRM makes no scientific or practical sense. All "scientific achievements" achieved by these methods are false and therefore must be revised based on irrefutable scientific facts. The use of these methods in medical practice is not only pointless, but very dangerous for patients. Firstly, because many patients with mild GERD do not receive timely pathogenetic treatment. Secondly, in patients with severe GERD who are misdiagnosed (jackhammer, diffuse esophageal spasm, and outflow obstruction), instead of treating GERD, manipulations (POEM, etc.) are performed, which further weaken the antireflux function of the LES. The only parties that benefit from the pseudoscientific upheaval are the hardware manufacturers and the doctors who do business with them.

To return to the bosom of science, one cannot count on those doctors who made a name for themselves by voting "yes" at consensus among 66% of participants. Even if they doubt the recommendations they voted for, their faith, under the influence of massive propaganda, in the correctness of the choice is too great, and the possibility of scientific analysis is too small to switch to scientific rails without resistance.

The way out is to create a commission to verify the scientific reliability of modern gastroenterology, the relationship of modern luminaries with manufacturers of diagnostic equipment and publishers of medical journals, which together prevent the publication of scientific papers in which they are criticized. This can only be done by independent scientists: a philosopher of medicine, recognized physiologists, famous physicists, urologists, and surgeons who are not related to pH manometry and HRM.

Dear colleagues! The current state in gastroenterology is very similar to the situation in Russia. I wish you to participate safely in discussions about gastroenterological problems.

Sincerely

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