

GASTRIC JUICE PH AS INDICATOR OF NEOPLASTIC RISK CONDITIONS

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Introduction. Gastric juice is commonly thrown away during upper endoscopy. However, it may represents a precious source of clinic-pathological information.

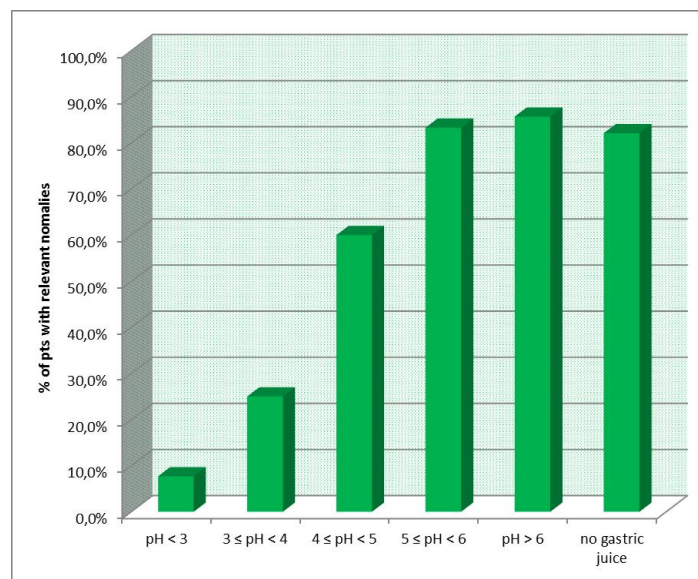
Aims & Methods: to evaluate the usefulness of gastric juice pH as indicator of neoplastic risk conditions correlated with hypochlorhydria.

216 patients undergoing EGDS were studied (99M, 117F, age 47±17). In each of them, gastric juice pH was assessed by means of a novel device (**EndoFaster 21-42**) performing gastric juice analysis in real-time (during endoscopy). Basal gastrinemia and a complex program of biopsies (2 in the antrum, 2 in the corpus, 4 in the fundus) and histological evaluation (H&E + himmunohistochemistry + argyrophil stains) were performed. Gastric acid secretion (BAO-PAO) and it was studied in a subgroup of 24 patients and in 22 controls. The following 8 parameters evaluated were: glandular atrophy and intestinal metaplasia (IM) of the antral and oxyntic mucosa; endocrine cells hyperplasia (G, ECL, antral non-G); hypergastrinemia. Results of this experimentation are reported in table below.

	pH<3 <i>155 pts</i> (71.8%)	3≤ pH <4 <i>8 pts</i> (3.7%)	4≤ pH <5 <i>5 pts</i> (2.3%)	5≤ pH <6 <i>6 pts</i> (2.7%)	pH>6 <i>14 pts</i> (6.5%)	no gastric juice <i>28 pts</i> (13.0%)
% antral atrophy	5.2	0	20	16.7	7.1	28.6
% antral IM	3.2	0	40	50	21.4	25
% G hyperplasia	0.6	12.5	20	16.7	21.4	35.7
% non-G hyperplasia	1.2	12.5	20	0	28.6	10.7
% oxyntic atrophy	0.6	0	20	33.3	57.1	46.4
% oxyntic IM	0	0	20	0	7.1	25
% ECL hyperplasia	0.6	0	20	16.7	28.6	46.4
% hypergastrinemia	1.9	0	20	16.7	21.4	25
% of pts with 1 or more pathological conditions	7.7	25	60	83.3	85.7	82.1

Results: The pH was strongly correlated ($r=0.67$ $p<0.01$) with the presence of the pathological conditions considered; the percentage of patients with one or more of these conditions increased as pH increased. According to the criterion of hypo-achlorhydria ($pH \geq 4$ or no gastric juice) utilized by **EndoFaster**, one or more pathological conditions were present in 81% of patients with hypo-achlorhydria and in only 9% of those normochlorhydric ($p<0.01$).

An inverse correlation was detected between pH and BAO ($r=-0.72$; $P<0.01$). Patients with atrophy of the oxyntic mucosa showed lower gastric acid secretion ($BAO=0.14 \pm 0.27$; $PAO=7.60 \pm 10.17$; mEq/h) than healthy controls ($BAO=2.80 \pm 1.31$; $PAO=23.25 \pm 8.38$) ($P<0.01$).



Conclusion: Hypochlorhydria represents a sensitive indicator of gastric risk conditions with high correlation (see the histogram below). The perendoscopic assessment of pH improves and extends optical analysis because it allows the identification of hypochlorhydric patients. The awareness of this condition "during" endoscopy may improve the identification of affections that often escape the diagnosis (...by alerting the endoscopist and the pathologist to design a more appropriate bioptic program and histological evaluation in the suspect patients).