

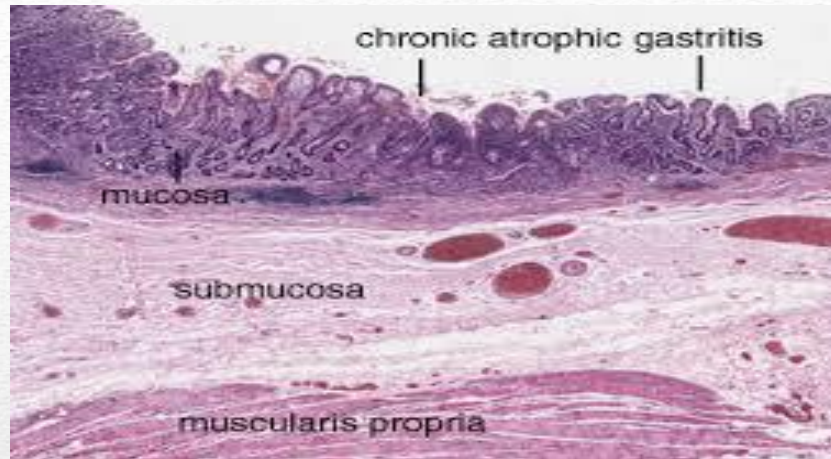
SEROLOGICAL DIAGNOSIS OF CHRONIC ATROPHIC GASTRITIS RELATED TO HISTOLOGICAL EVALUATION: A CLINICAL STUDY ON 10,000 PATIENTS IN PRIMARY CARE SETTING



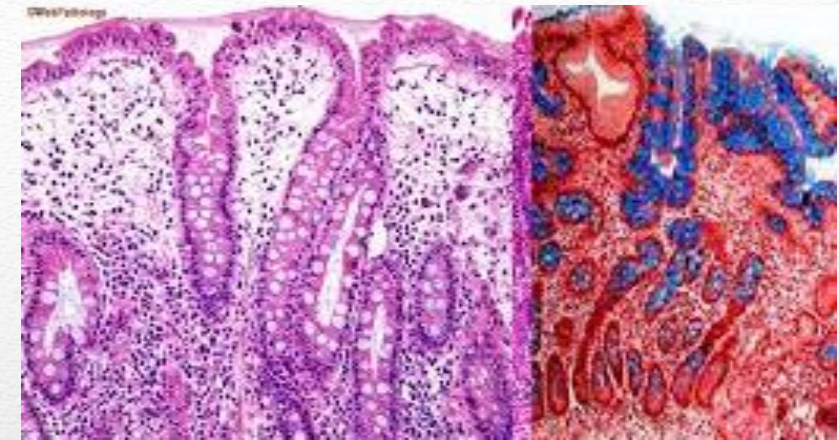
Barchi Alberto
Capasso Mario
Cesario Silvia



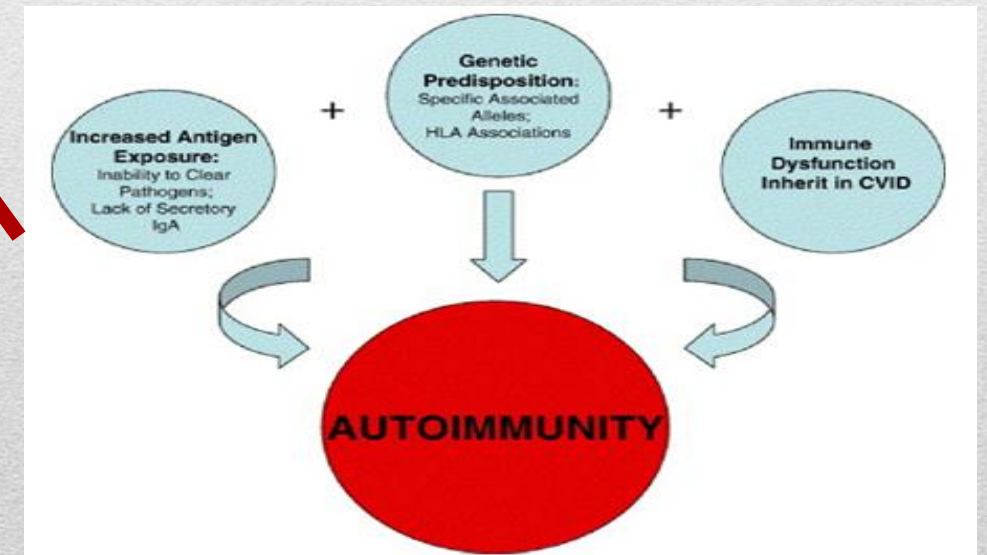
Atrophy with Fibrosis



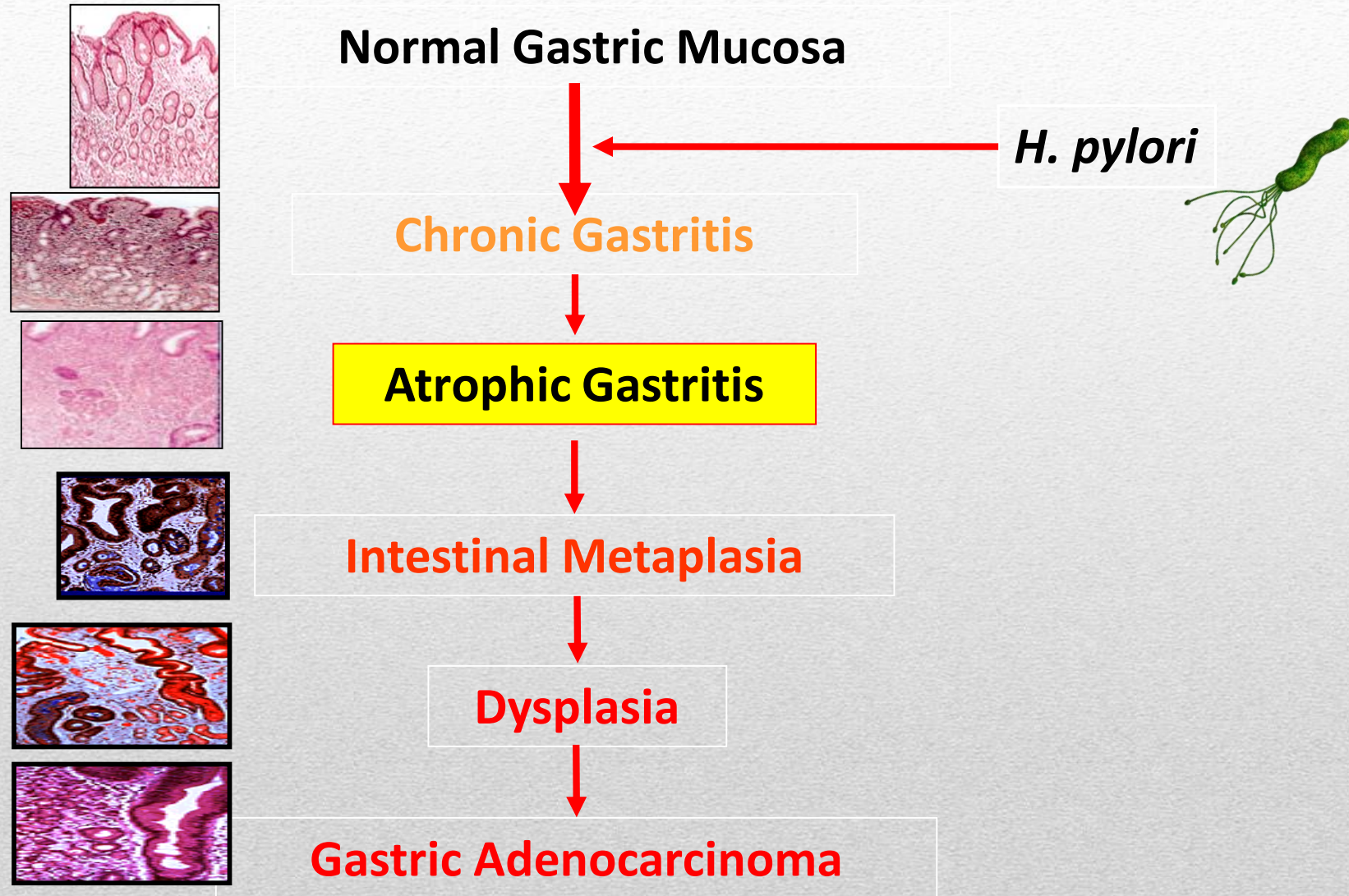
Atrophy with Intestinal Metaplasia



Chronic Atrophic Gastritis



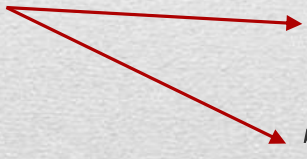
The Multi-step of gastric carcinogenesis: “Correa’s cascade”



Gastric Cancer: Epidemiology

- **Gastric Cancer** is a relevant medical issue worldwide.



- **2012**  **951.594** diagnosis of GC
723.073 deaths

- In Italy **13.001** new cases, with **9.917** deaths.



The Parma area

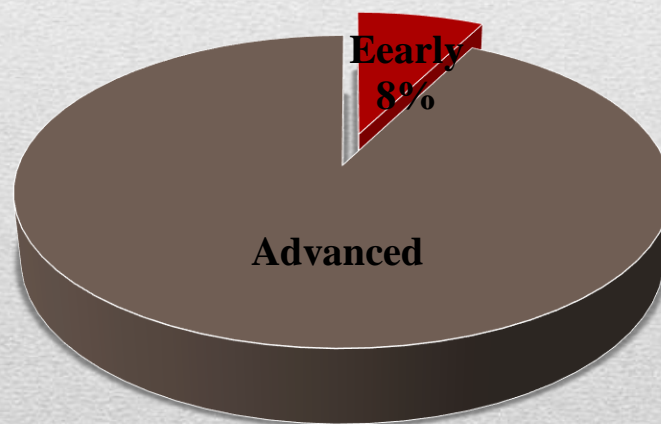


● EARLY ● ADVANCED

584 cases of gastric cancer (M=318, mean age 78ys, range 36-105ys) from 2010 to 2016

early gastric cancer: 44/584 (7.53%) (M=24, mean age 75.68ys, range 47-92ys).

advanced gastric cancer was established in 540 pts (M=318, F=222, mean age 78.20ys, range 36-105ys). (92.47%)



■ early ■ advanced



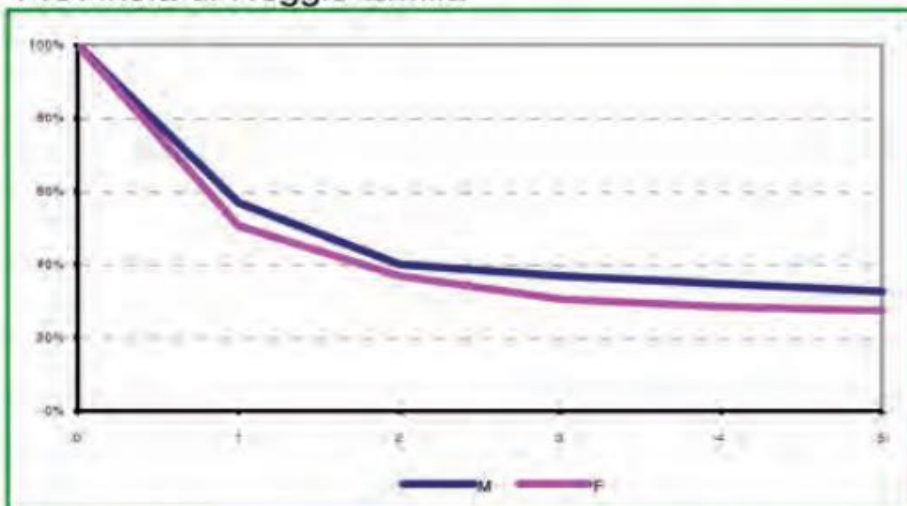
The Modena/Reggio Emilia Area

Sintesi dei risultati. Anni 2011-2012

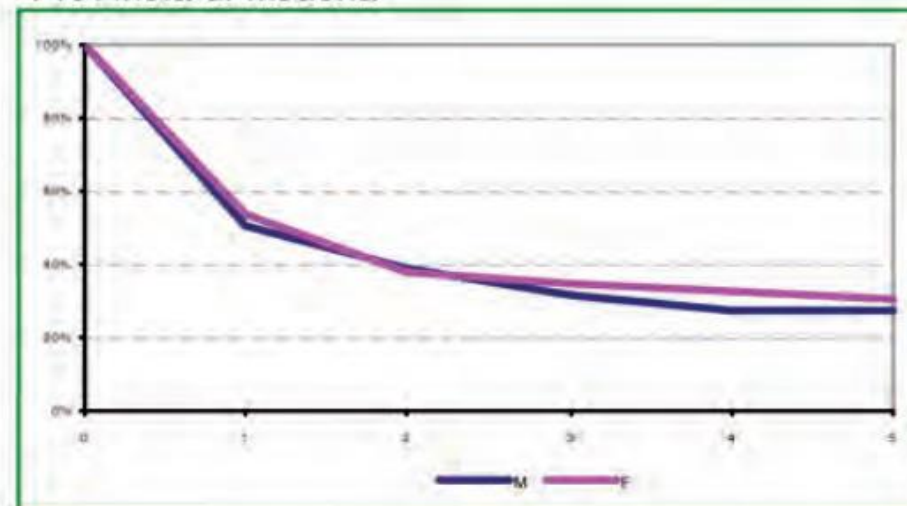
	Reggio Emilia						Modena					
	incidenza			mortalità			incidenza			mortalità		
	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F
casi	148	101	249	124	102	226	166	145	311	125	111	236
tasso grezzo⁽¹⁾	28.1	18.6	23.3	23.6	18.8	21.1	24.0	20.1	22.0	18.1	15.4	16.7
tasso standardizzato EU⁽¹⁾	17.2	8.8	12.8	13.5	7.7	10.5	13.6	8.6	10.9	10.1	6.0	7.9
rischio cumulativo 0-84 (‰)	27.3	13.3	19.8	23.0	12.6	17.4	20.8	12.9	16.6	14.5	9.0	11.6
% verifiche microscopiche	98.0	89.1	94.4				95.8	90.3	93.3			
% DCO	0.0	0.0	0.0				0.6	2.1	1.3			
trend (1996-2012)*	▼	▼	▼	▼	◀▶	▼	▼	▼	▼	▼	▼	▼

(1) per 100.000. * per i valori dell'APC fare riferimento alle tabelle 3 e 4 in appendice

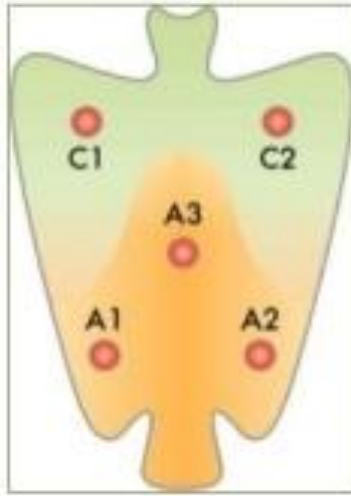
Sopravvivenza relativa %, per sesso. Casi 2006-2010 con follow up al 31/12/2013, età15+
Provincia di Reggio Emilia



Provincia di Modena



CAG and OLGA STAGING SYSTEM



ATROPHY SCORE		CORPUS			
Score 0: no atrophic glands		No atrophy (score 0)	Mild atrophy (score 1)	Moderate atrophy (score 2)	Severe atrophy (score 3)
Score 1: 1–30% of atrophic glands					
Score 2: 31–60% of atrophic glands					
Score 3: >60% of atrophic glands					
ANTRUM	No atrophy (score 0) (including <i>incisura angularis</i>)	STAGE 0	STAGE I	STAGE II	STAGE II
	Mild atrophy (score 1) (including <i>incisura angularis</i>)	STAGE I	STAGE I	STAGE II	STAGE III
	Moderate atrophy (score 2) (including <i>incisura angularis</i>)	STAGE II	STAGE II	STAGE III	STAGE IV
	Severe atrophy (score 3) (including <i>incisura angularis</i>)	STAGE III	STAGE III	STAGE IV	STAGE IV

Gastropanel® (Biohit, Finland).

Normal Values

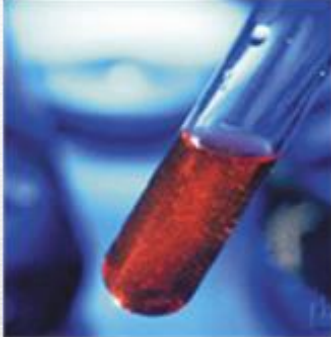
PG I



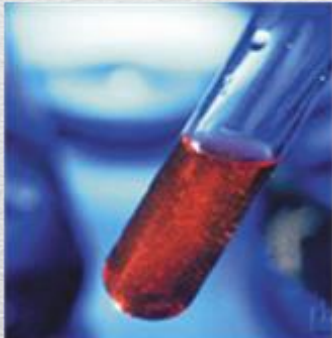
G-17



PG II



Hp-IgG



PG I

30-120 µg/L

PG II

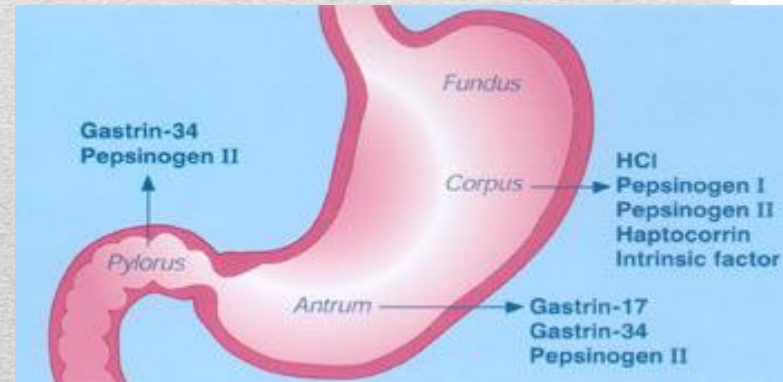
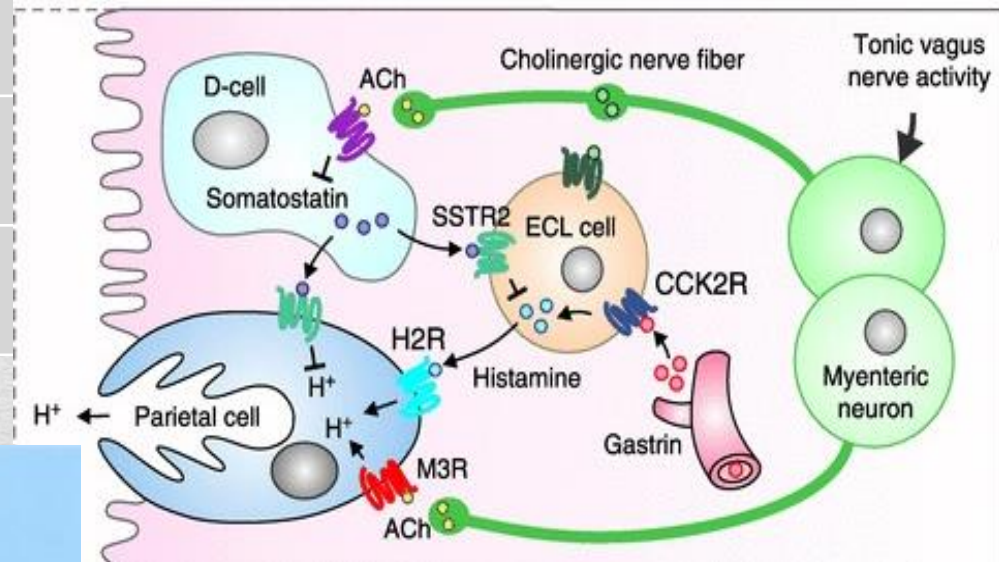
2-15 µg/L

G-17

1-9 pmol/L

Hp-IgG

<30 EIU



Systematic review with meta-analysis: diagnostic performance of the combination of pepsinogen, gastrin-17 and anti-Helicobacter pylori antibodies serum assays for the diagnosis of atrophic gastritis.

Zagari RM¹, Rabitti S¹, Greenwood DC², Eusebi LH¹, Vestito A³, Bazzoli F¹.

⊕ Author information

Abstract

BACKGROUND: The combination of pepsinogen, gastrin-17 and anti-H. pylori antibodies serological assays (panel test) is a non-invasive tool for the diagnosis of atrophic gastritis. However, the diagnostic reliability of this test is still uncertain.

AIM: To assess the diagnostic performance of the serum panel test for the diagnosis of atrophic gastritis.

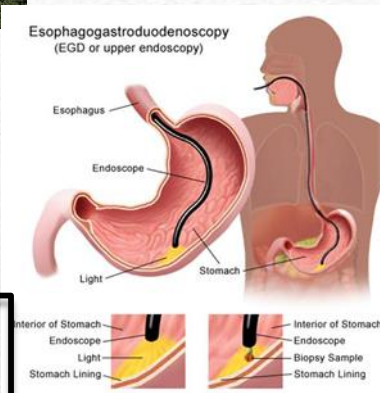
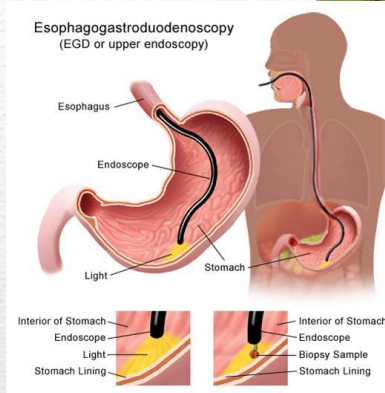
METHODS: Medline via PubMed, Embase, Scopus, Cochrane Library databases and abstracts of international conferences proceedings were searched from January 1995 to December 2016 using the primary keywords "pepsinogens," "gastrin," "atrophic gastritis," "gastric precancerous lesions." Studies were included if they assessed the accuracy of the serum panel test for the diagnosis of atrophic gastritis using histology according to the updated Sydney System as reference standard.

RESULTS: Twenty studies with a total of 4241 subjects assessed the performance of serum panel test for the diagnosis of atrophic gastritis regardless of the site in the stomach. The summary sensitivity was 74.7% (95% confidence interval (CI), 62.0-84.3) and the specificity was 95.6% (95%CI, 92.6-97.4). With a prevalence of atrophic gastritis of 27% (median prevalence across the studies), the negative predictive value was 91%. Few studies with small sample size assessed the performance of the test in detecting the site of atrophic gastritis.

CONCLUSIONS: The combination of pepsinogen, gastrin-17 and anti-H. pylori antibodies serological assays appears to be a reliable tool for the diagnosis of atrophic gastritis. This test may be used for screening subjects or populations at high risk of gastric cancer for atrophic gastritis; however, a cost-effectiveness analysis is needed.

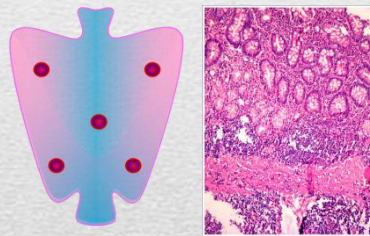


No gastric cancer



OLGA I-II (25 pts T1; 26 pts T2)
PG I-II RATIO >3

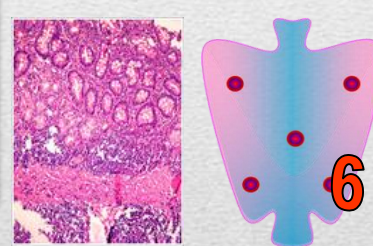
Vanoi Valley (Italy)
1994-2006
93 subjects



OLGA staging



Gastropanel



OLGA staging



Gastropanel

6 cases of gastric cancer



OLGA III-IV (10 pts T1; 13 pts T2)
PGI-II RATIO <3

- **Low-grade IEN:** 2 pts T1; 1 pts T2
- **High-grade IEN:** 0 pts T1; 1 pts T2
- **Invasive GC:** 0 pts T1; 2 pts T2

$P = 0.001$

T1

12 years follow-up

T2

Aim of the study

The aim of the present study is to investigate the frequency of CAG in a study population in primary care setting by means of a non-invasive test, compared with histology as a gold standard.



Material and Methods

10,000 dyspeptic patients enrolled from two different areas of North-East of Italy

-Sample size-

Group A(n° 7.400) Padova	Group B(n° 2.600) Treviso
M:F= 1.2:2.0	M:F= 1.5:2.3
Mean Age 53 years	Mean Age 56 years
enrolled between 2003 and 2014	enrolled between 2011 and 2013



First level
center for
CAG. 2,600
patients
(Group B)

Third level
center for
CAG. 7,400
patients
(Group B)

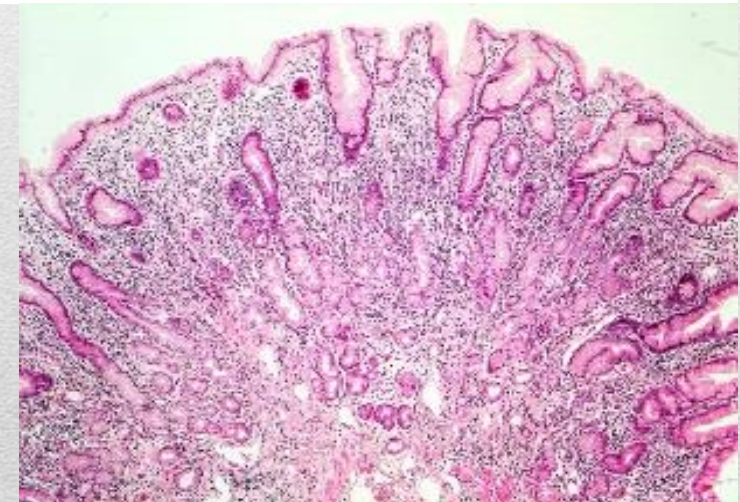
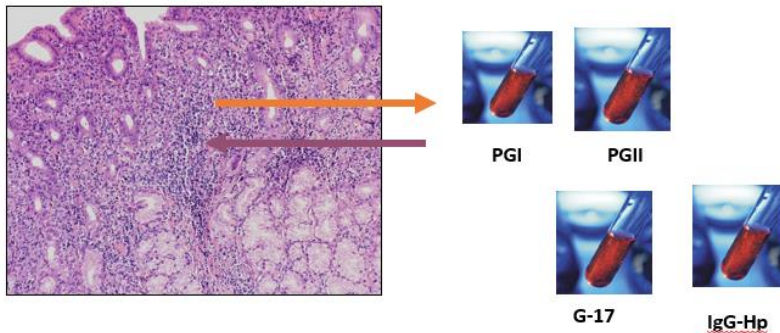
Material and Methods

In every patient were performed:

- **Upper G.I. endoscopy with biopsy sampling**
evaluated according to Sydney classification and/or O.L.G.A. Staging System
- **Gastropanel®**

SCORE VALUE		OXYNTIC ATROPHY			
ANTRAL ATROPHY		0	1	2	3
	0	0	I	II	II
	1	I	II	II	III
	2	II	II	III	IV
	3	III	III	IV	IV
		STAGES			

Gastropanel®
"A serological biopsy"



Material and Methods

SEROLOGICAL DIAGNOSIS OF BODY CAG WAS MADE BY:

Low levels of PGI ($\text{PGI} < 25 \mu\text{g/L}$) as well as high levels of G-17 ($\text{G-17} > 14 \text{ pmol/L}$) were considered diagnostic for CAG

➤ PG I serum levels $< 25 \mu\text{g/L}$



➤ G-17 concentrations $> 14 \text{ pmol/L}$



The normal values:

PGI: $30\text{-}120 \mu\text{g/L}$,

PGII: $2\text{-}15 \mu\text{g/L}$,

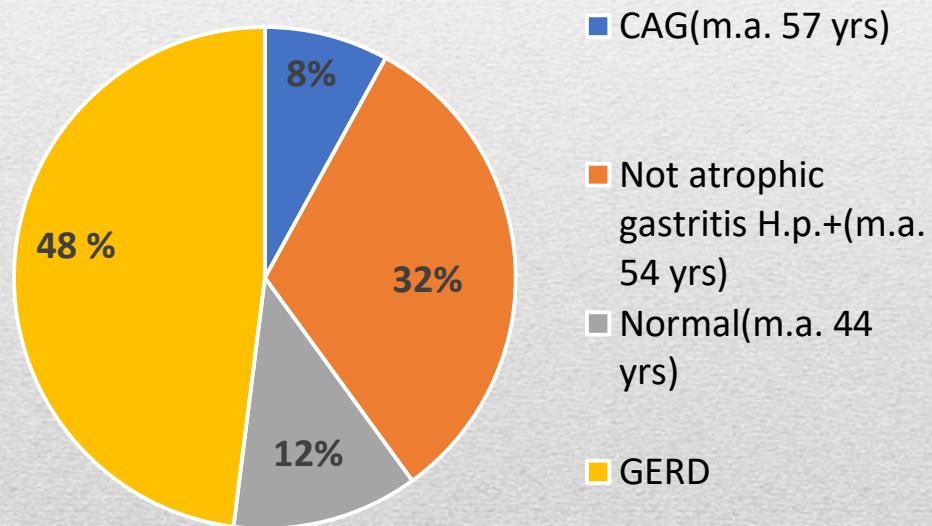
G-17: $1\text{-}9 \text{ pmol/L}$,

Hp-IgG: $< 30 \text{ U/L}$.

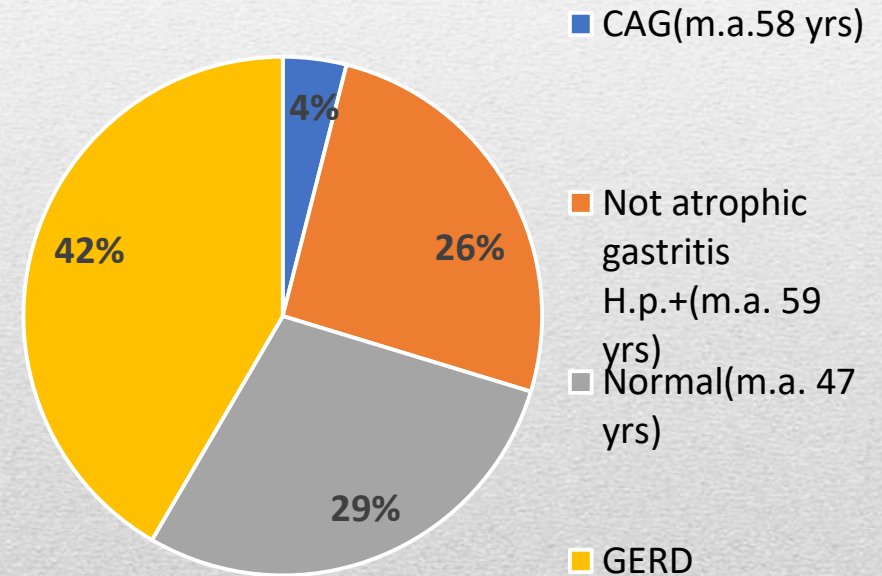
Results

Body chronic atrophic gastritis was diagnosed by serology in 716 out of 10,000 (7.2%)

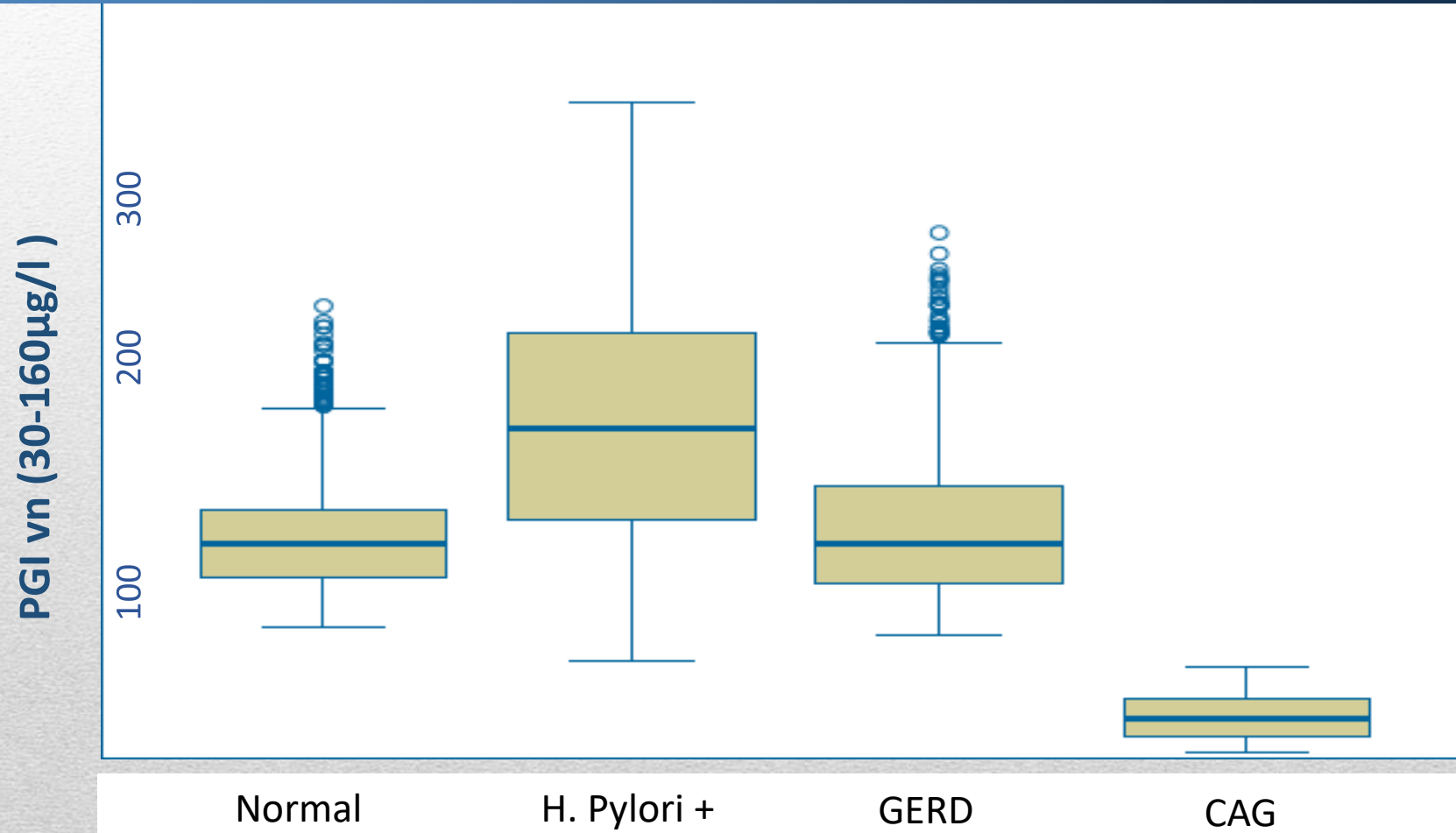
Group A (7,400 pts) – Padova -



Group B (2,600 pts) – Treviso -

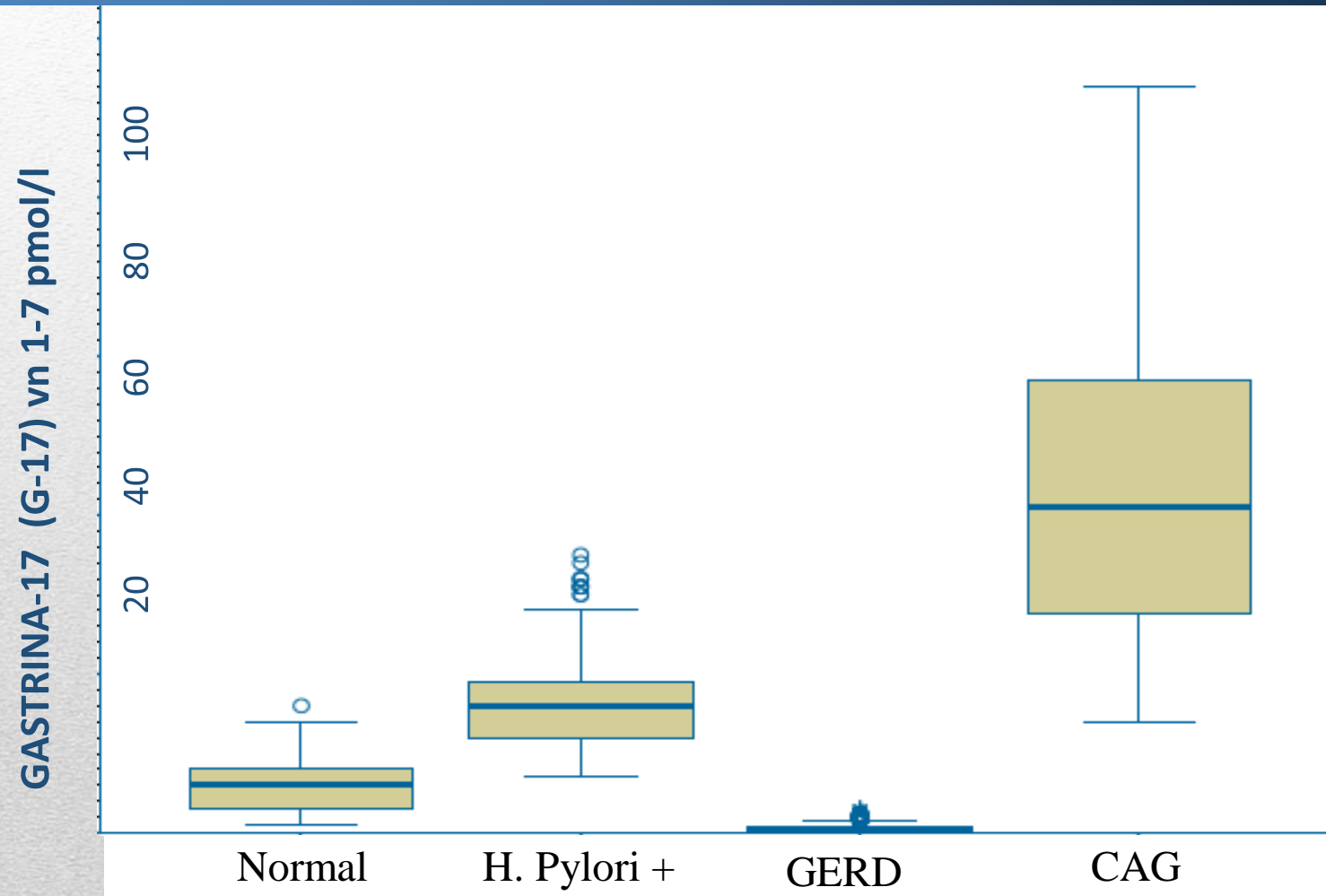


PGI



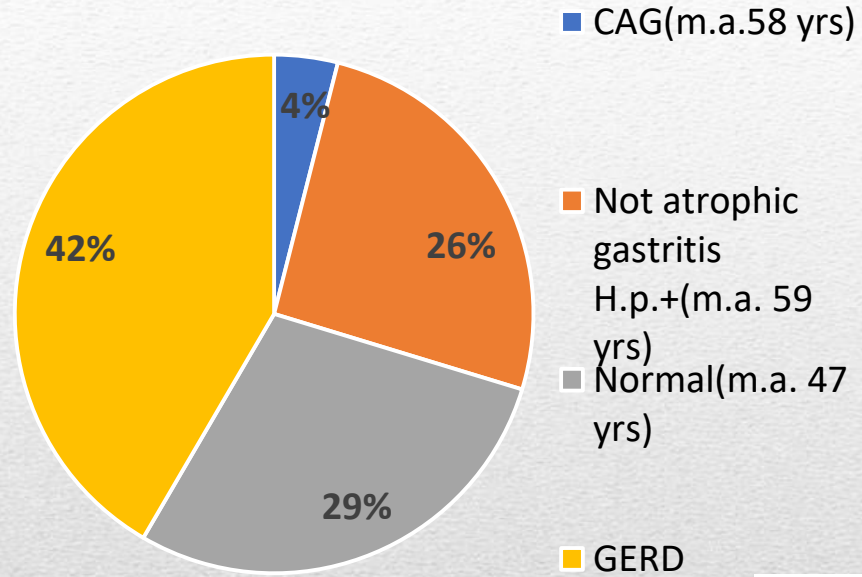
$p < 0.05$

G-17



$p < 0.05$

Results: 1900 in Group B



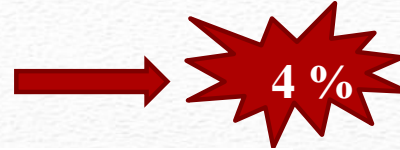
Group B: 1.900 out of 2.600 pts suitable for histological evaluation by OLGA

M= 769; F=1131
mean age = 56.4 ys
range= 29-78 ys.

Exclusion criteria: upper GI surgery, alarm symptoms.



83 out of 1.900 investigated patients showed CAG

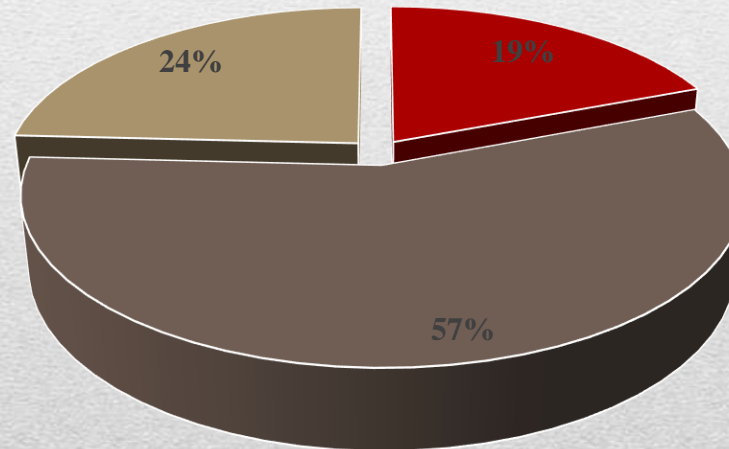


SEX [Male]	Mean Age	Range
44	61	49-82

The great majority of 83 pts in which the diagnosis was CAG showed a picture of OLGA 3 or OLGA 4 .

OLGA	% PZ
2	19.2 %
3	56.6%
4	24.2%

N patients = 83



■ OLGA 2 ■ OLGA 3 ■ OLGA 4

Results

The relationship between PGI levels and OLGA stage shows a statistically significant difference between the stages OLGA 0, 1, 2 and the stages 3 and 4.

OLGA STAGING	PGI mean values (pmol/L)
OLGA 0	72.45
OLGA 1	85.95
OLGA 2	47.38
OLGA 3	16.00
OLGA 4	10.10

p < 0.001

Results

The relationship between OLGA stages and G-17 serum levels shows a statistically significant difference.

OLGA STAGING	G-17 mean values (µg/L)
OLGA 0	4.6
OLGA 1	5.2
OLGA 2	26.5
OLGA 3	44.6
OLGA 4	38.5

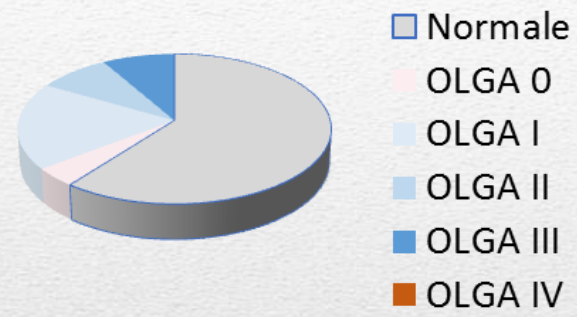
$p < 0.01$

By comparing OLGA 0-1 against OLGA 2-4 $\rightarrow p < 0.02$

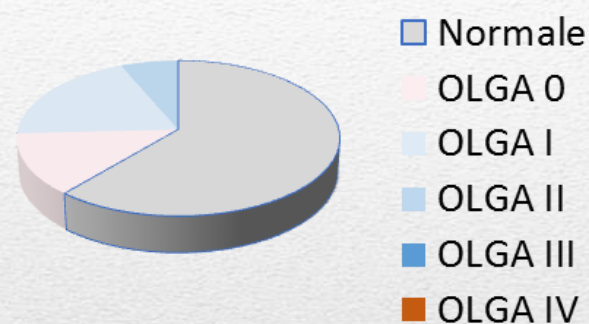
CONCLUSION: Relationship between OLGA and Gastropanel®

420 PATIENTS

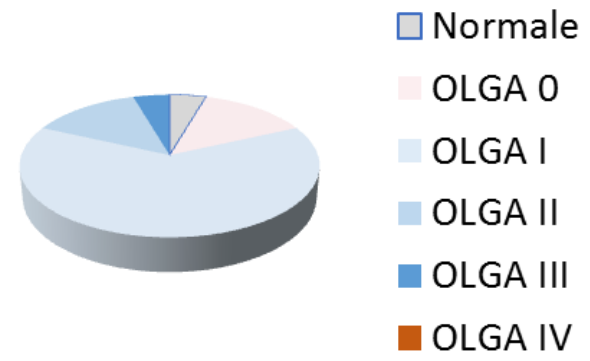
Normal



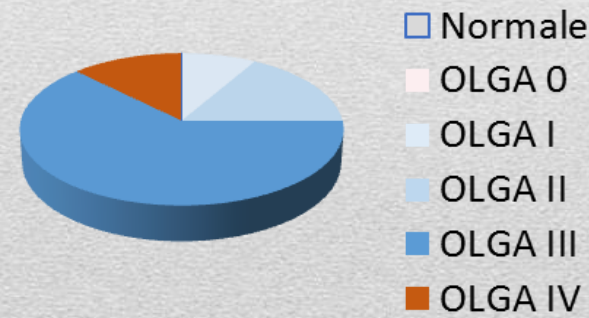
GERD



Hp + gastritis



Atrophic gastritis



CONCLUSIONS

- ❑ In a primary care setting a picture of CAG was found in above 7.2% of patients in agreement with previous studies
 - ❑ The higher frequency in Group A could be explained by different reference evaluation of Centers. First Level (Treviso) vs Third Level (Padova)
 - ❑ Subjects affected by CAG show higher mean age in comparison with both patients with H.p. related non atrophic gastritis and normal population in both settings
 - ❑ Statistically significant relationship ($p < 0.02$) was found between atrophic histological damage according with OLGA staging and serological values by Gastropanel.
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Il nostro gruppo



Grazie per l'attenzione!

