USEFULNESS OF GASTROPANEL IN GERD, CHRONIC GASTRITIS AND OTHER UPPER G.I. DISEASES

Parma 22/09/2015


Gastropanel in primary care

Maastricht

Pepsinogens as ***''suggested''*** test

MAPS Oporto

"Low serum pepsinogen levels ***can also predict precancerous conditions*** and, in such patients, Helicobacter pylori serology may also be useful for further detection of high risk individuals."

Maastricht IV Florence

Pepsinogens are ***the best non invasive test*** to identify subjects at risk for gastric cancer

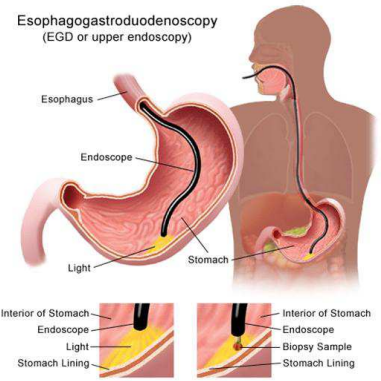
Kyoto

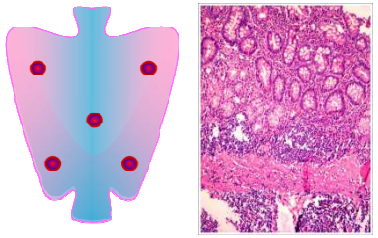
Serological tests ***(pepsinogen I and II and anti-H. pylori antibody)*** are useful for selecting subjects at high risk for gastric cancer. ***Consensus level=90%***

Eradication Hp in order to prevent gastric cancer

Parma

2000 2011 2012 2014





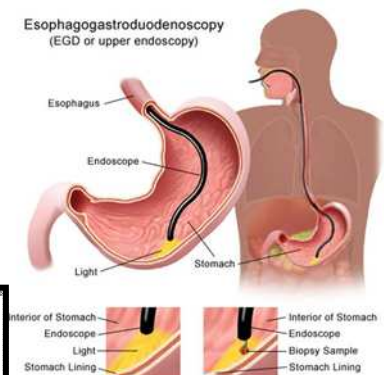
Vanoi Valley (Italy)

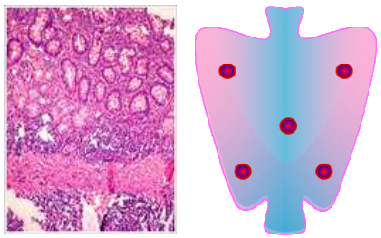
1994-2006

93 patients

OLGA staging

Gastropanel





OLGA staging

Gastropanel

OLGA I-II PG I-II RATIO >3

OLGA III-IV PGI-II RATIO<3

T1

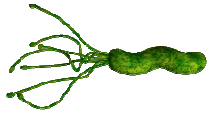
12 years follow-up

T2

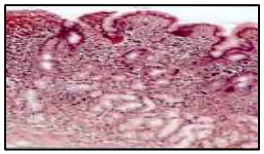
Rugge M. *et al.* APT 2010;31:1104-11

Normal Gastric Mucosa

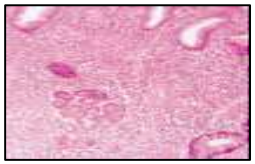
H. pylori



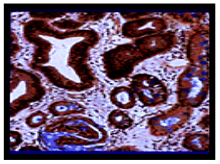
Chronic Gastritis



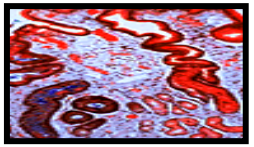
Achloridria



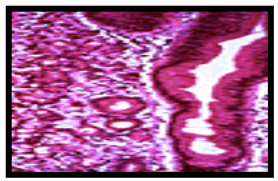
Atrophic Gastritis



Intestinal Metaplasia



Dysplasia



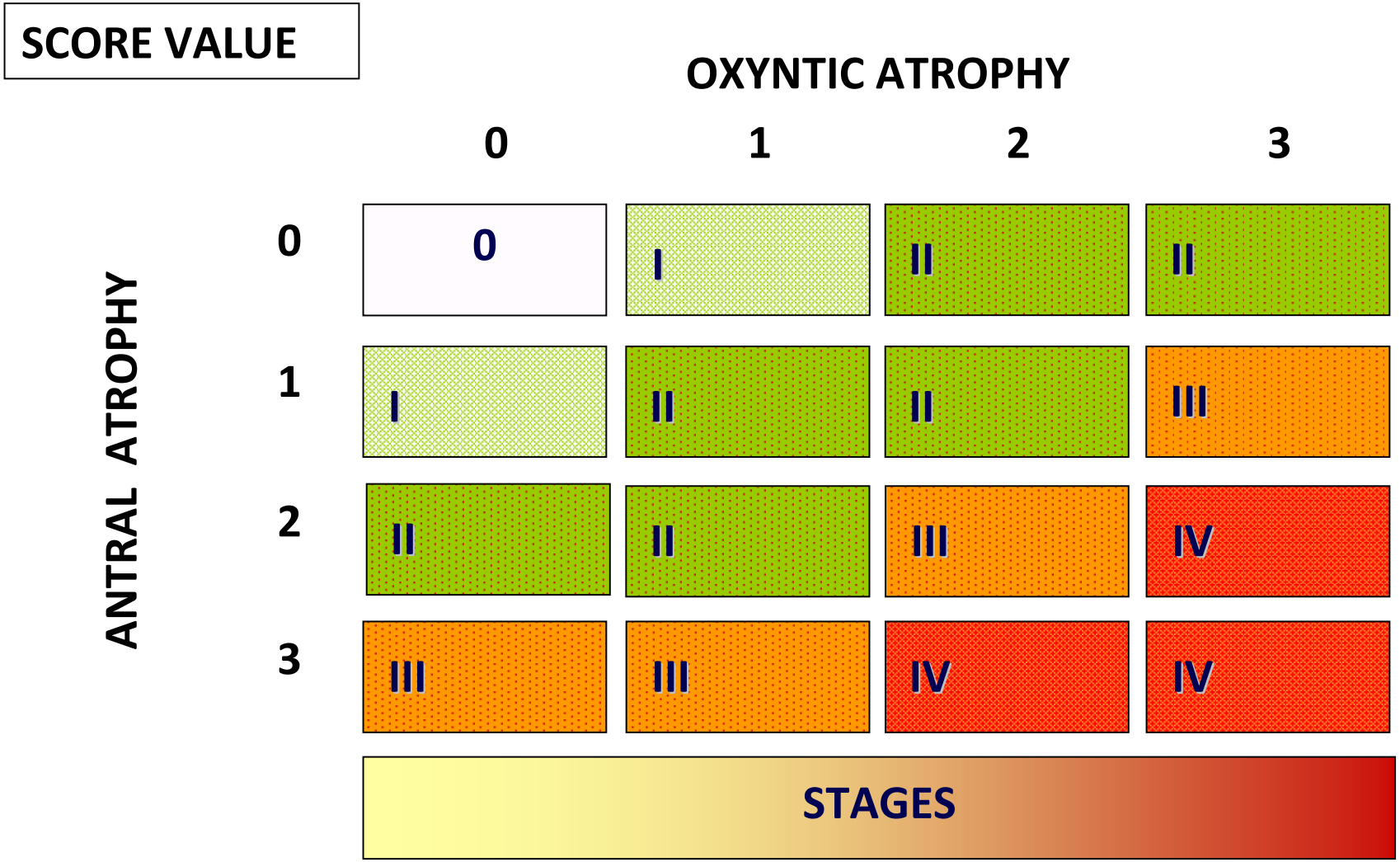
Gastric Adenocarcinoma

Chicago, 4th May 2014

Healthy Stomach Initiative

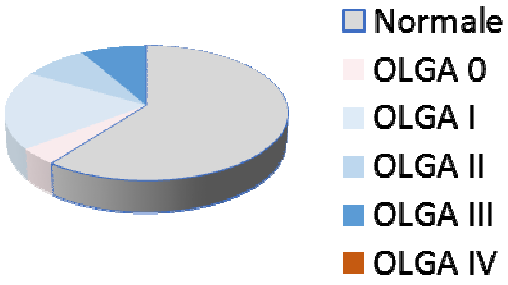
Correa P. Cancer Res. 1992; 52:6735-6740.

GASTRITIS STAGING: THE OLGA

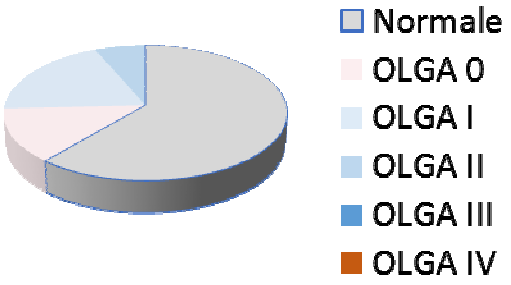


RELATIONSHIP BETWEEN OLGA AND GASTROPANEL

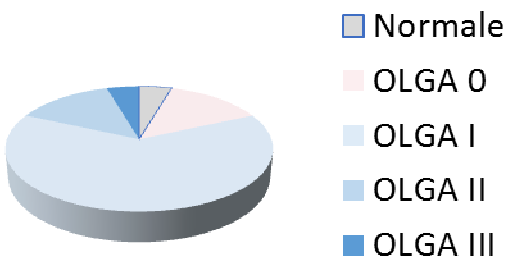
Normal



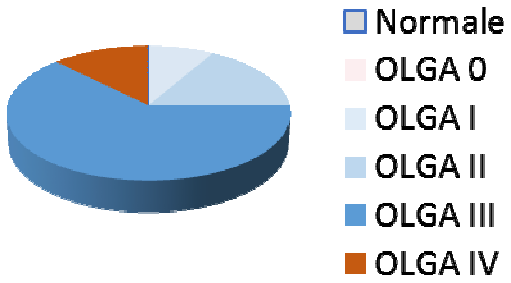
GERD



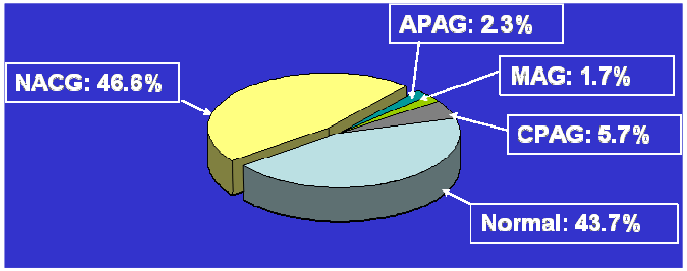
Hp + gastritis

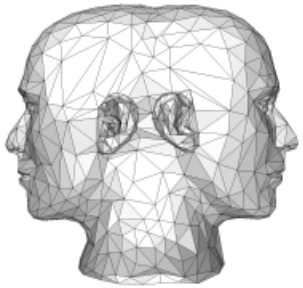


Atrophic gastritis

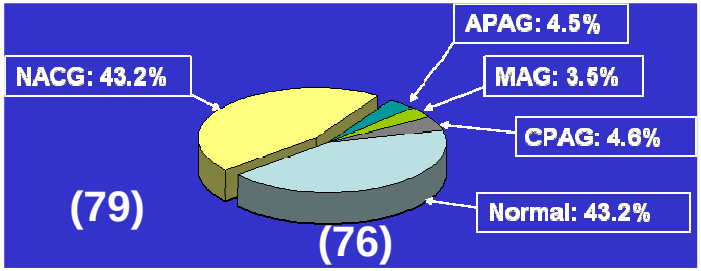


Serologic diagnosis



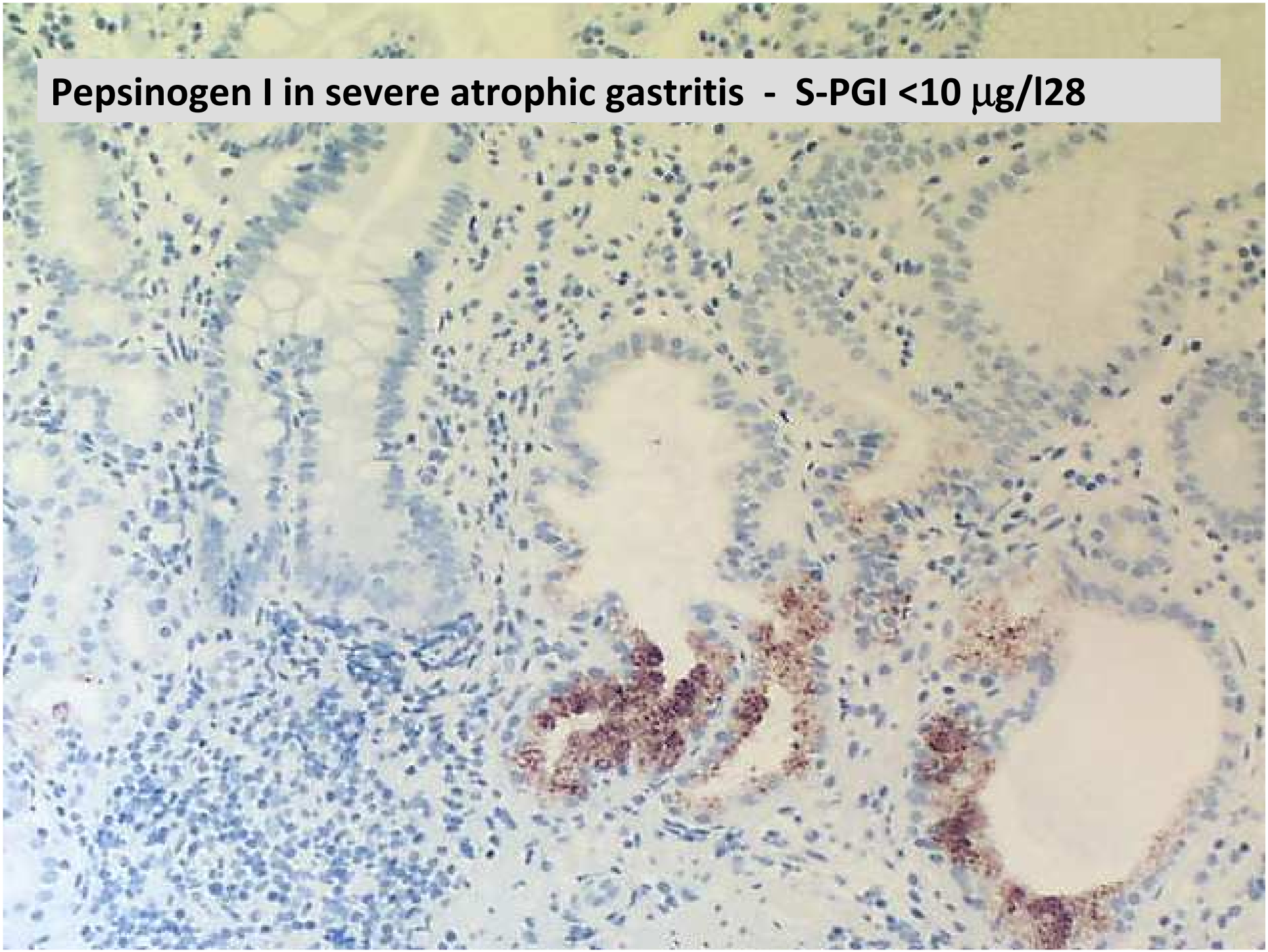


Histologic diagnosis

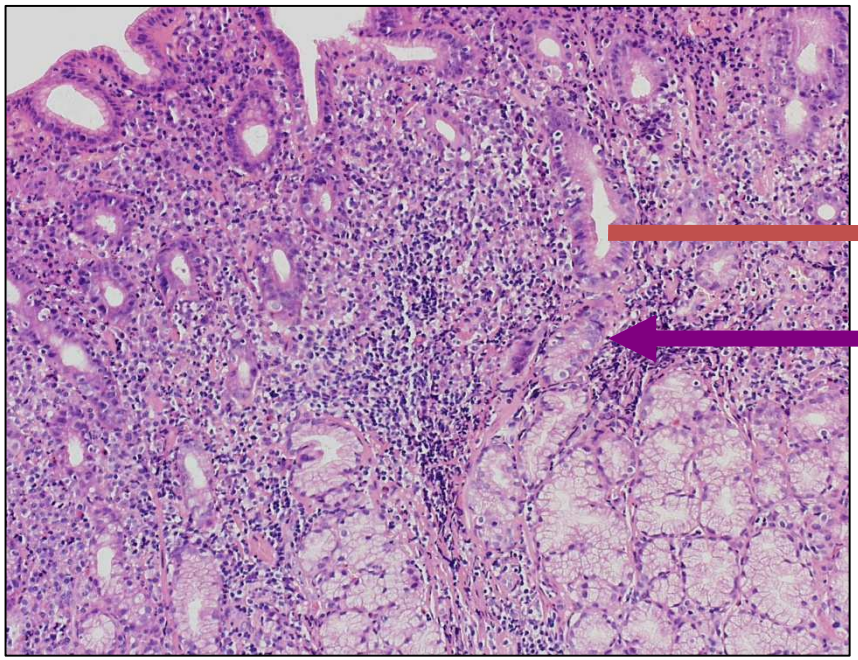


GASTROPANEL

Patterns	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy (%)
Normal	79	83	78	84	81
Inflammation	80	80	77	83	80
Atrophy	78	98	82	98	96


Pepsinogen I in severe atrophic gastritis - S-PGI <10 μg/l28

Gastropanel® “A serological biopsy”



PGI

PGII

G-17

IgG-Hp

PGI

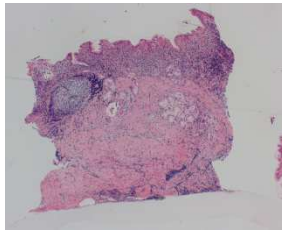
Acid production

Evaluation of basal and maximal acid OUTPUT

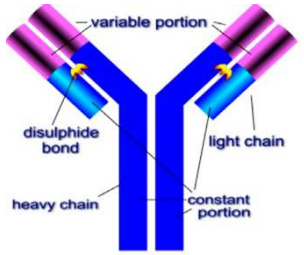
Titration

PATIENTS

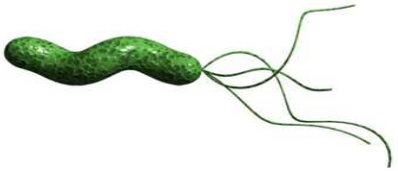
42 patients



Atrophic gastritis



Autoimmune gastritis n= 22

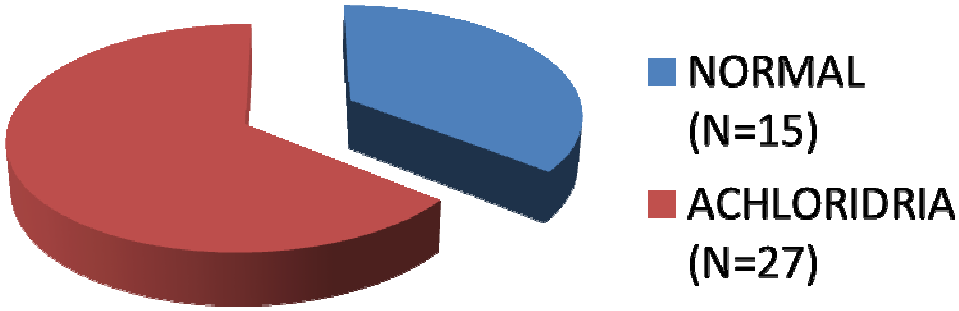


Post Hp gastritis n= 20

N=24

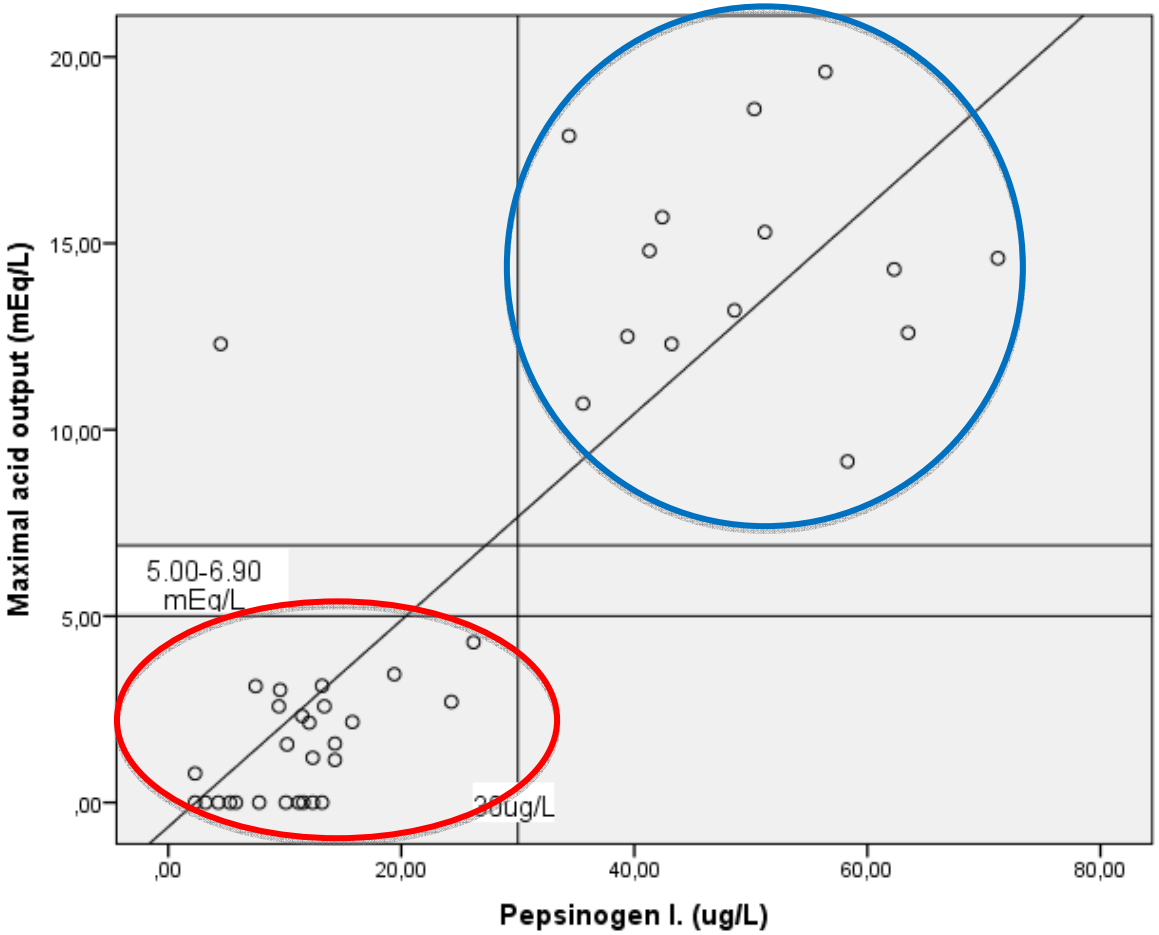
N=18

Mean age: 53,7 years



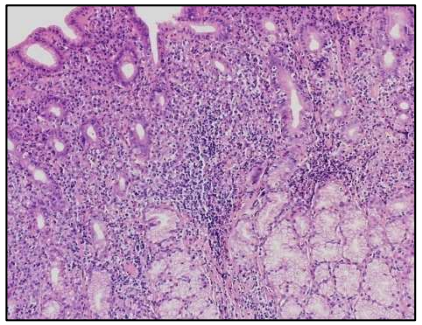
Mean ± SD	Achlorhydria		Normal function	
	AAG	MAG	AAG	MAG
PG I.	11,23 ± 5,84		46,84 ± 15,95	
	11,60 ± 6,10	10,83 ± 5,77	51,85 ± 12,83	41,11 ± 18,15
PG II.	7,47 ± 2,37		9,99 ± 2,79	
	7,62 ± 1,80	7,30 ± 2,93	11,46 ± 2,79	8,31 ± 1,72
PG1/PG2	1,70 ± 1,02		4,95 ± 1,99	
	1,55 ± 0,77	1,88 ± 1,25	4,84 ± 1,84	5,09 ± 2,29
G17	139,85 ± 68,19		25,56 ± 45,27	
	149,48 ± 67,87	129,48 ± 69,71	13,45 ± 6,88	39,40 ± 65,63
MAO	1,40 ± 1,38		14,24 ± 2,90	
	1,26 ± 1,64	1,55 ± 1,08	14,18 ± 2,35	14,30 ± 3,62

RESULTS

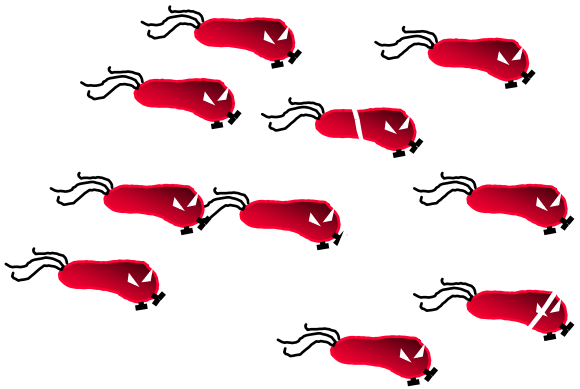

Maximal acid output (mEq/L)
20,00
15,00
10,00
5,00
,00
5.00-6.90
mEq/L
30ug/L
,00
20,00
40,00
60,00
80,00
Pepsinogen I. (ug/L)

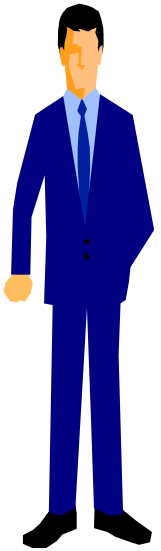
PGII

Marker di inflammazione



Role of PG in acute H. pylori infection





20 healthy
Hp-ve*Adult
Volunteers
(Age: 23-33)

PG baseline

PG in Hp acute infection

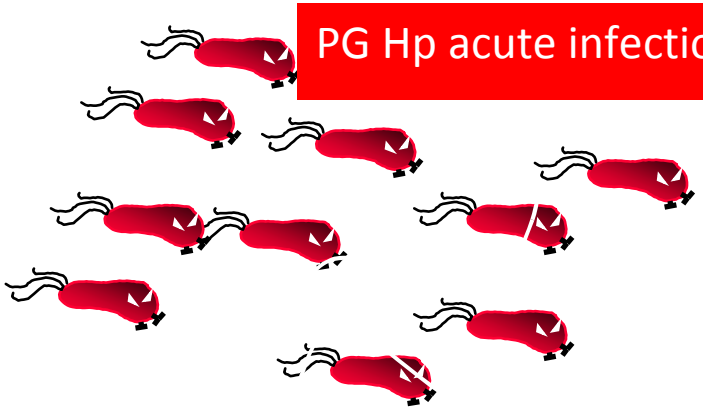
.....

*by C13UBT, culture, RUT and histology

**by C13UBT, culture, RUT and histology,
≥4 WK post-Ttt

Nugalieva ZZ & Graham DY et al. 2005

PG & Acute H. pylori infection



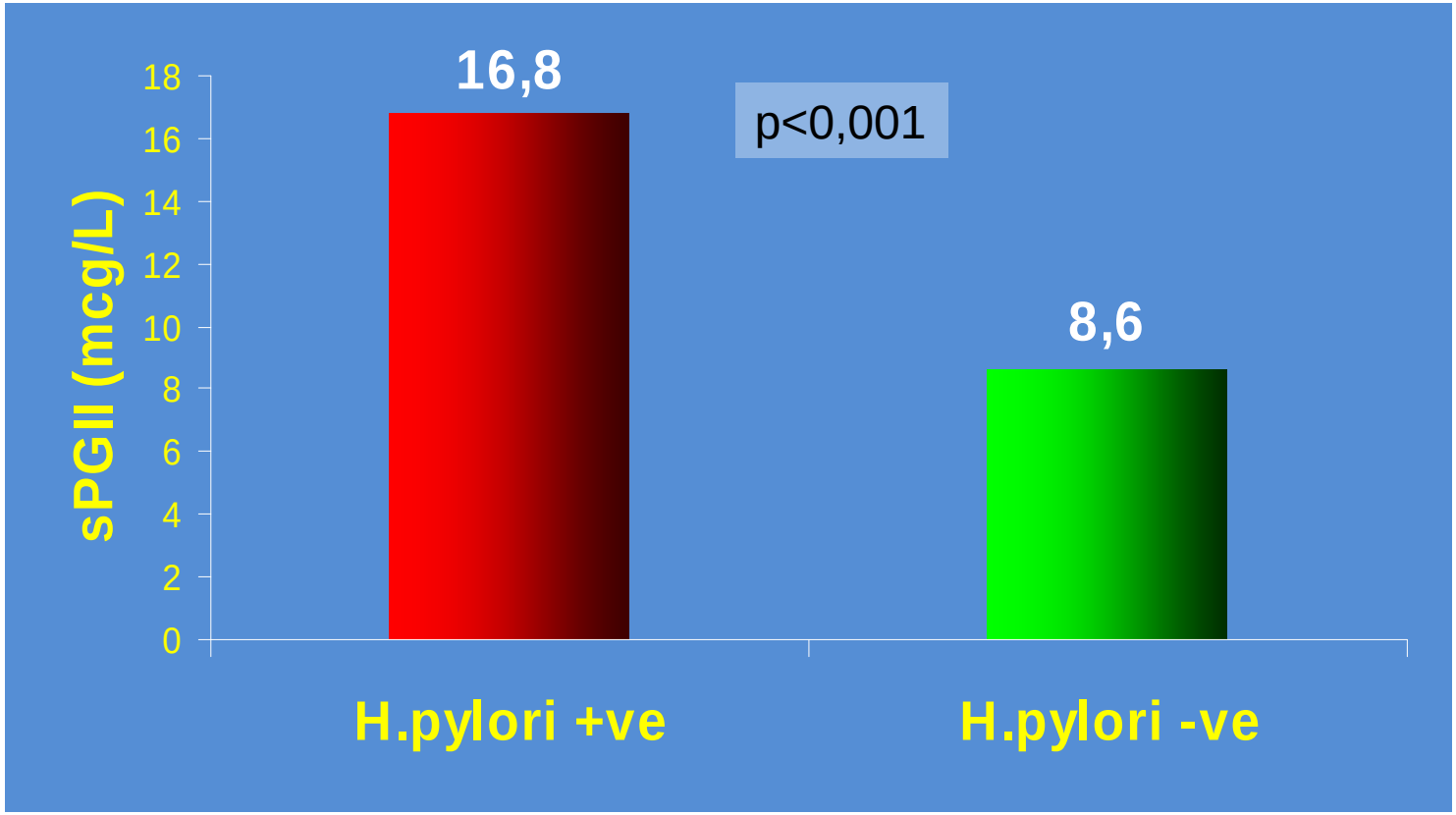
PG baseline		7 Day		14 Day		28 Day
PGI	75±36	*p=ns	96±92	363±200	*p=ns	227±200
% seroconversion			17%	71%		94%
PGII	9.1±8.5	*p=0.008	18±16	*p=0.001	42±40	
% seroconversion			28%	94%		

*Wilcoxon Rank Test

Nugalieva ZZ & Graham DY et al. 2005

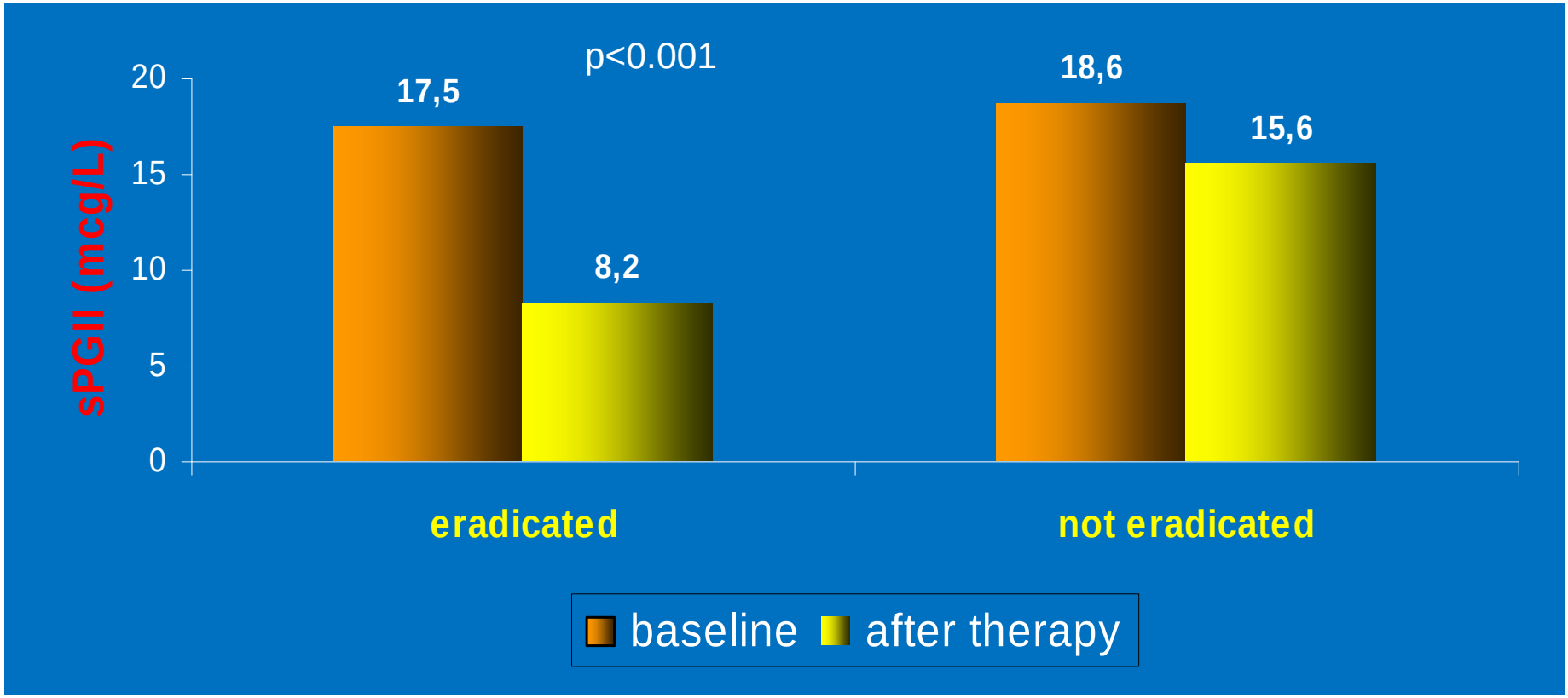
sPGII & H. pylori infection

313 dyspeptic patients



Di Mario et al, Digestion 2004

sPGII & H. pylori infection before and after therapy

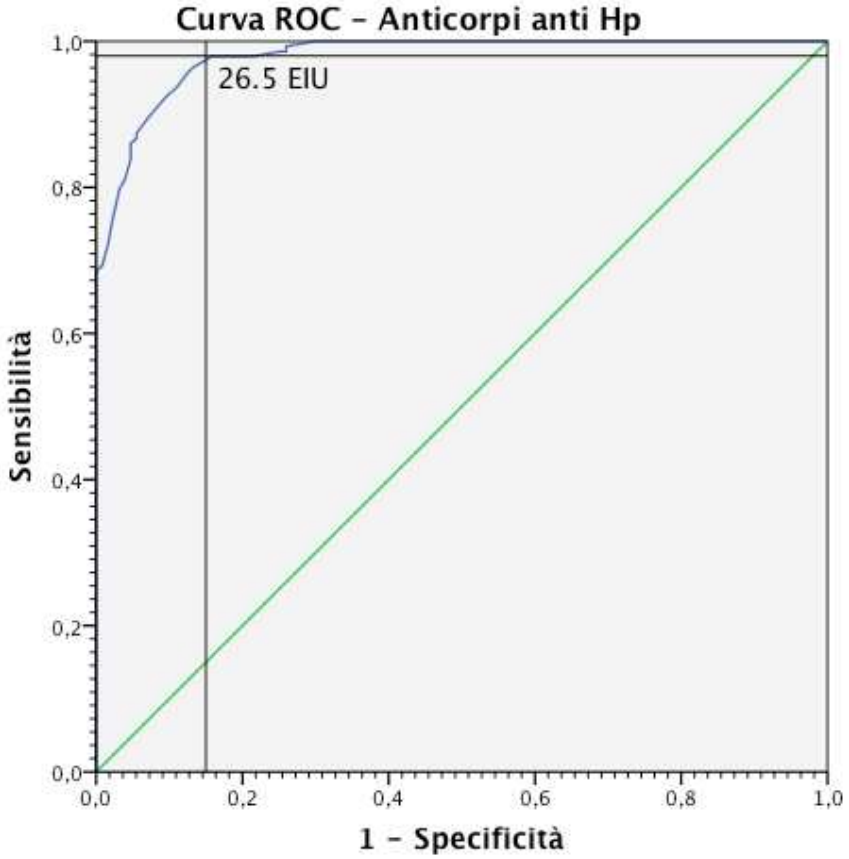


Di Mario et al, Digestion 2004

Hp IgG

Role of Helicobacter pylori

ROC CURVE Hp IgG PER DIAGNOSI DI GASTRITE Hp-CORRELATA



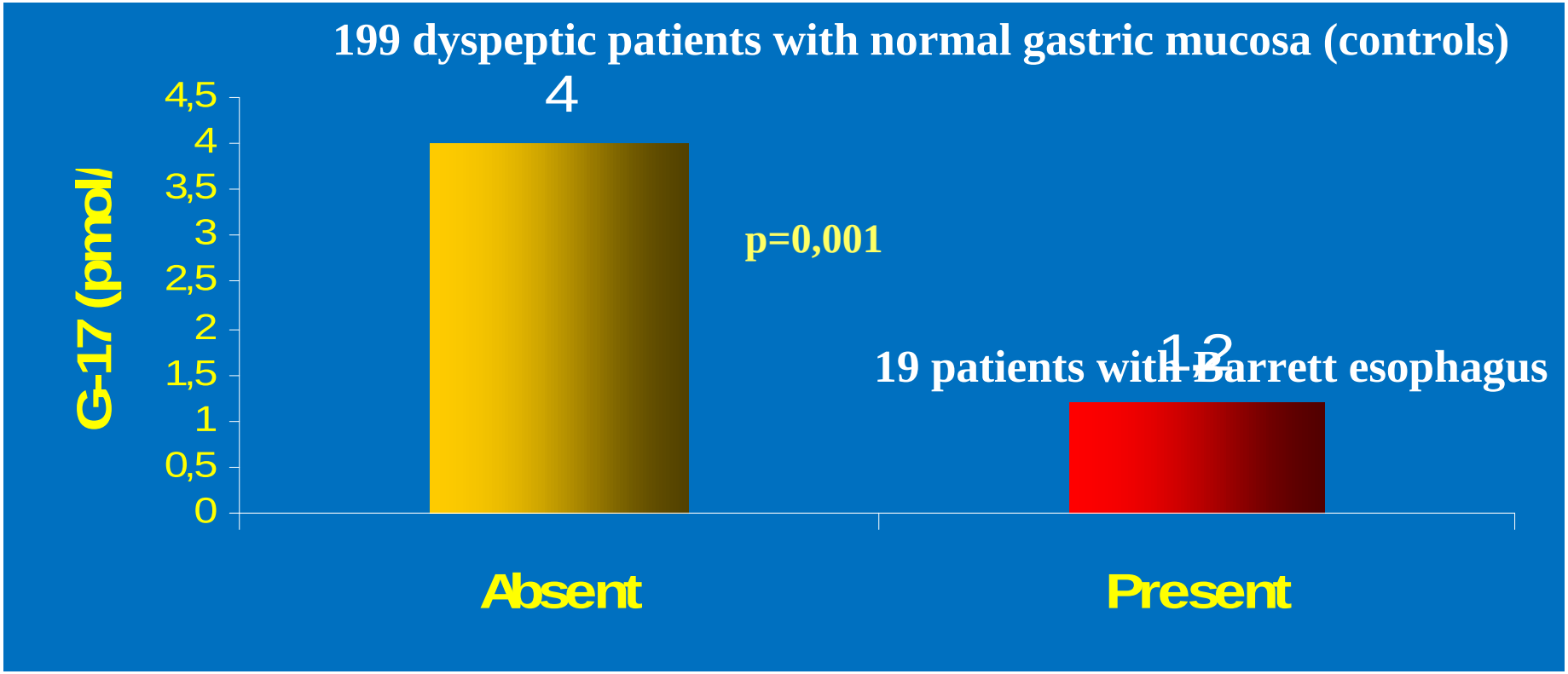
144 patients with endoscopical diagnosis of non atrophic gastritis Hp-related and 127 patients with dyspepsia Hp negative.

Accepted EHSG 2014

G-17

Reflux disease

Fasting Gastrin-17 & Barrett



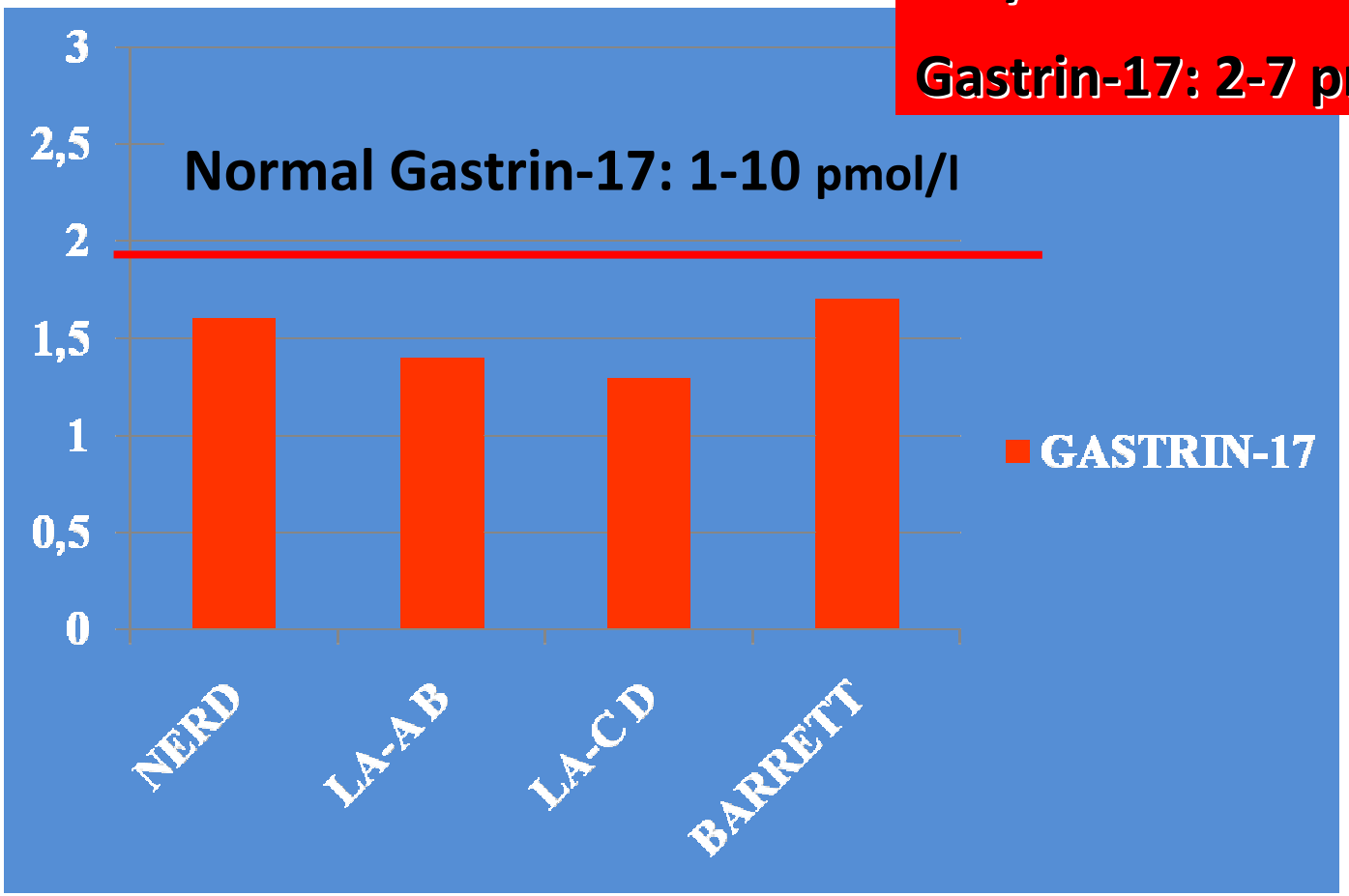
P Sipponen et al. World J Gastroenterol 2005; 11 (38): 5988-5992

Serum gastrin and pepsinogens do not correlate with the different grades of severity gastro-oesophageal reflux disease: a matched case control study

NERD = Non Erosive Reflux Disease; LA= Los Angeles

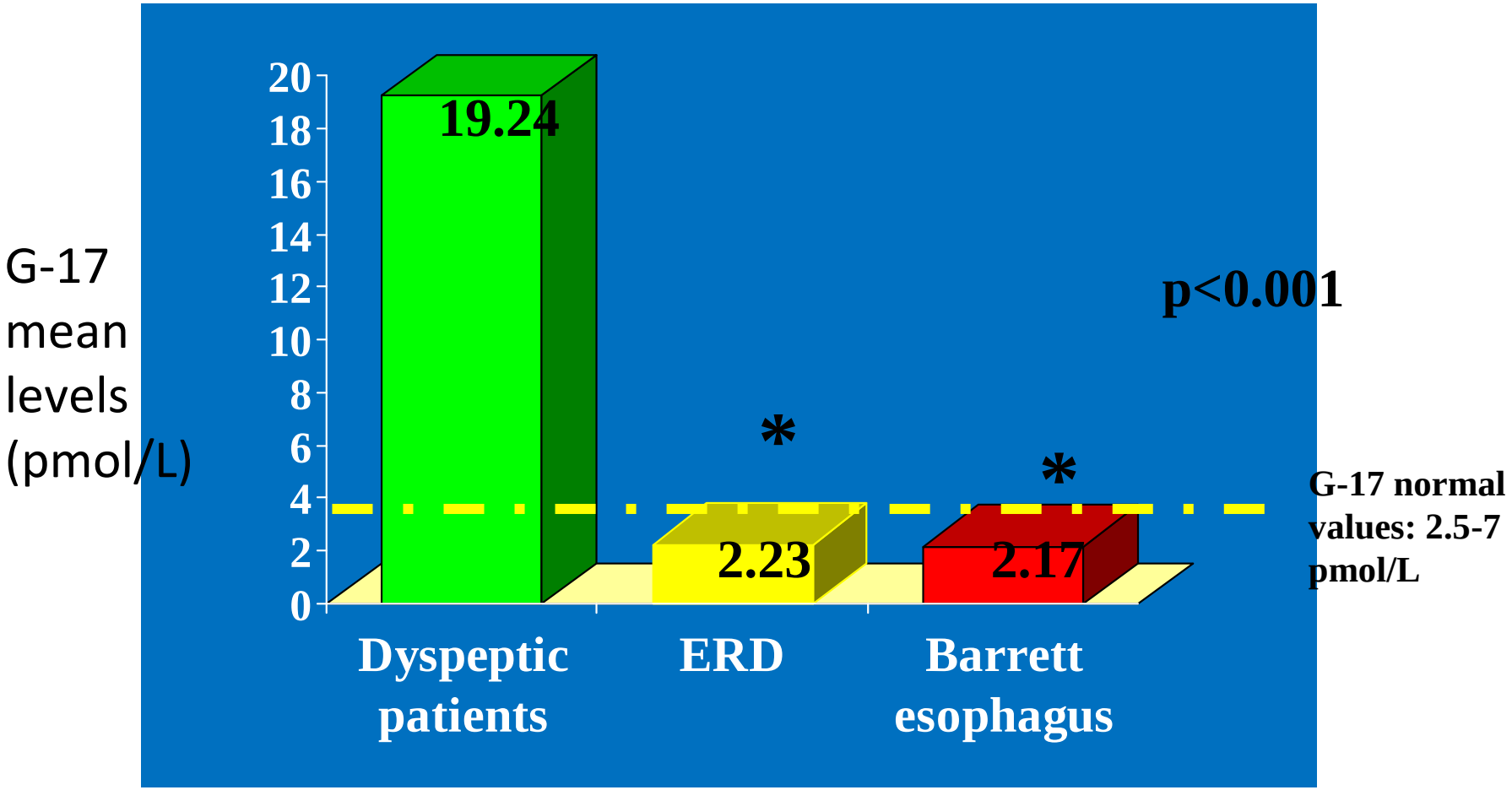
Values considered in Italy

Gastrin-17: 2-7 pmol/l



Monkemuller K et al. APT 2008 15;28, 491-496

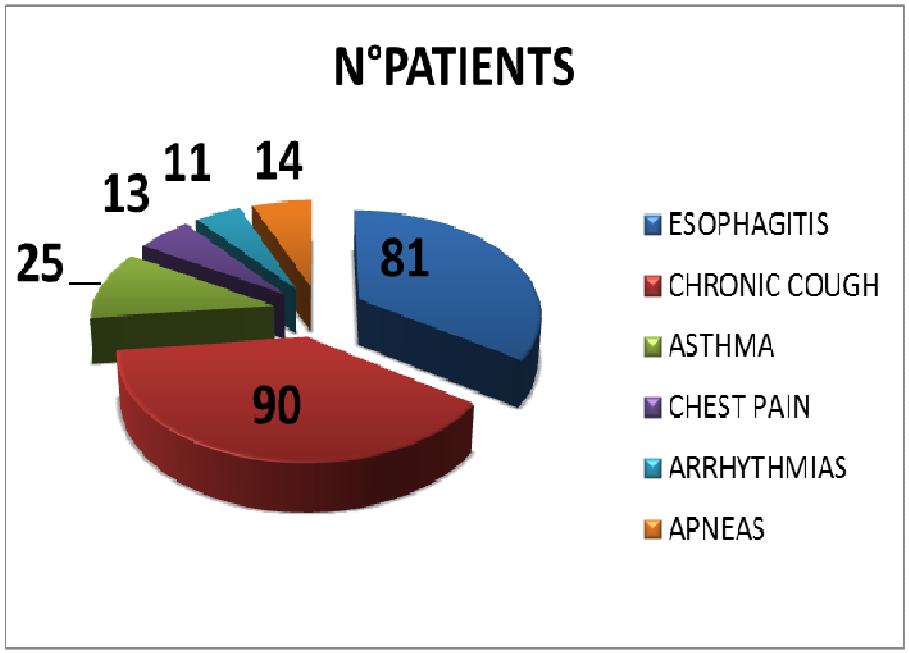
G-17 serum levels in dyspeptic patients vs ERD and Barrett patients



Di Mario F et al DDW 2008

PATIENTS AND METHODS

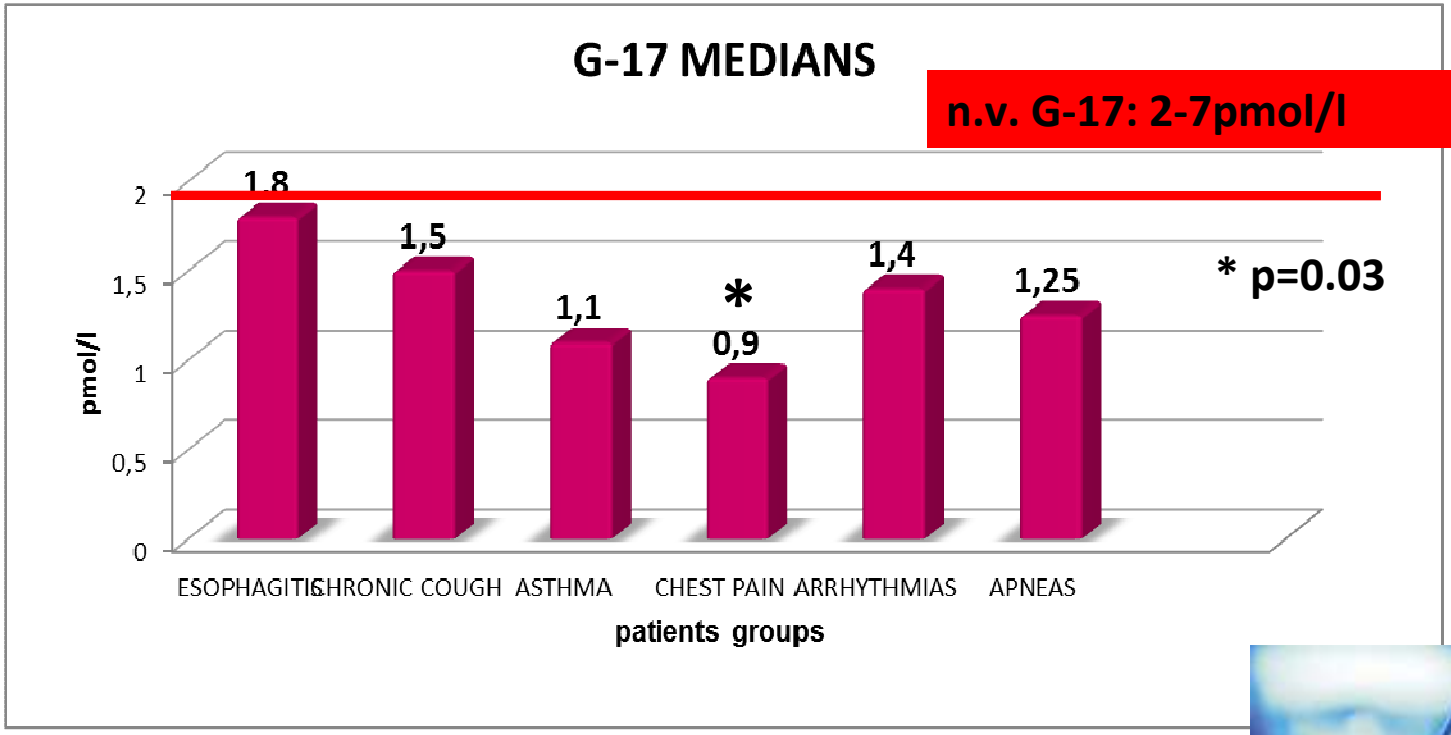
234 consecutives patients enrolled from 2008 to may 2010
(mean age: 47,3 ys; range 19-76 ys)
114 men (mean age 46,65 ys; range 22-76 ys)
120 women (mean age 47,39 ys; range 19–74 ys)



234 patients were divided into six groups:
90 patients with chronic cough,
25 pts with non allergic asthma,
13 pts with non cardiac chest pain
11 pts with arryhtmias
14 pts with nocturnal obstructive apneas
<u>Control group:</u> 81 patients with typical symptoms of GERD and endoscopic evidence of esophagytis

Di Mario F et al 2009 DDW

RESULTS

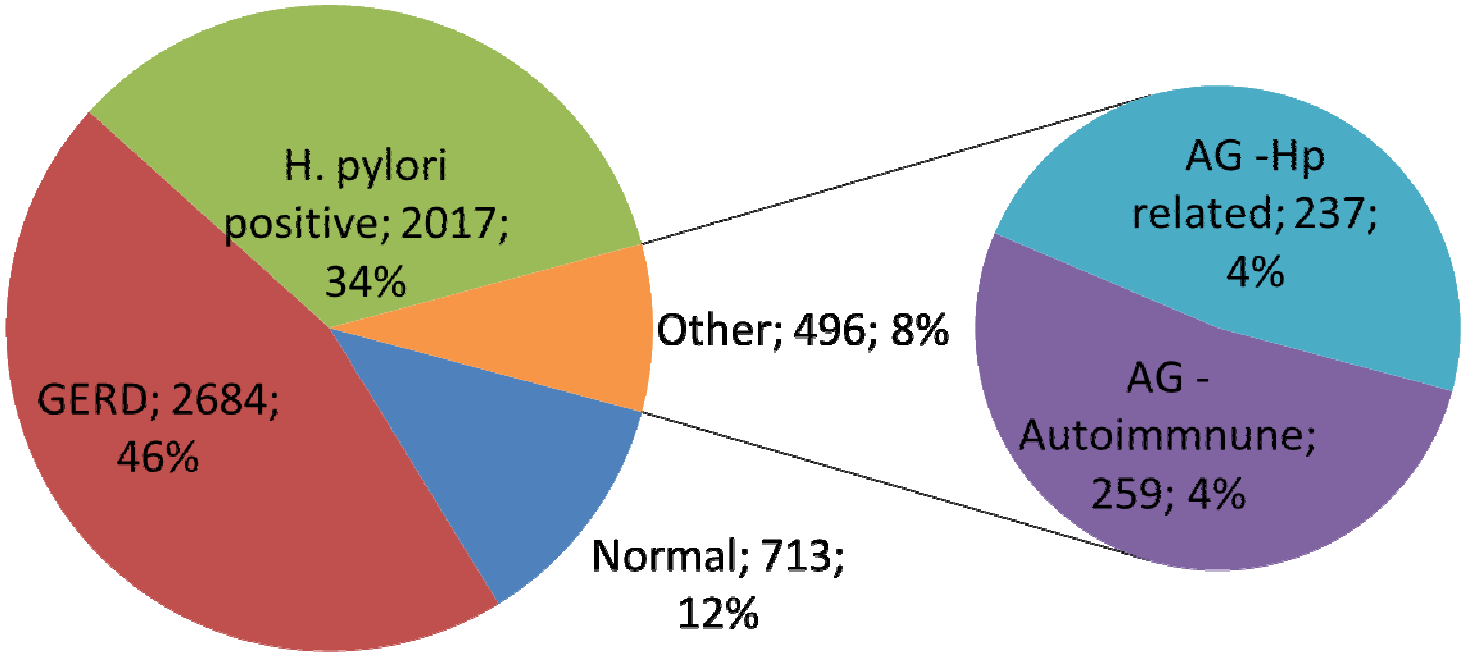


In all groups values of gastrin 17 were lower than normal levels as previously reported in patients with typical symptoms

in patients with atypical symptoms, serum levels of this parameter are lower than control group

There is a statistically significant difference in patients with chest pain (p=0,032)

Padova: 6000 gastropanel (2003-2012)

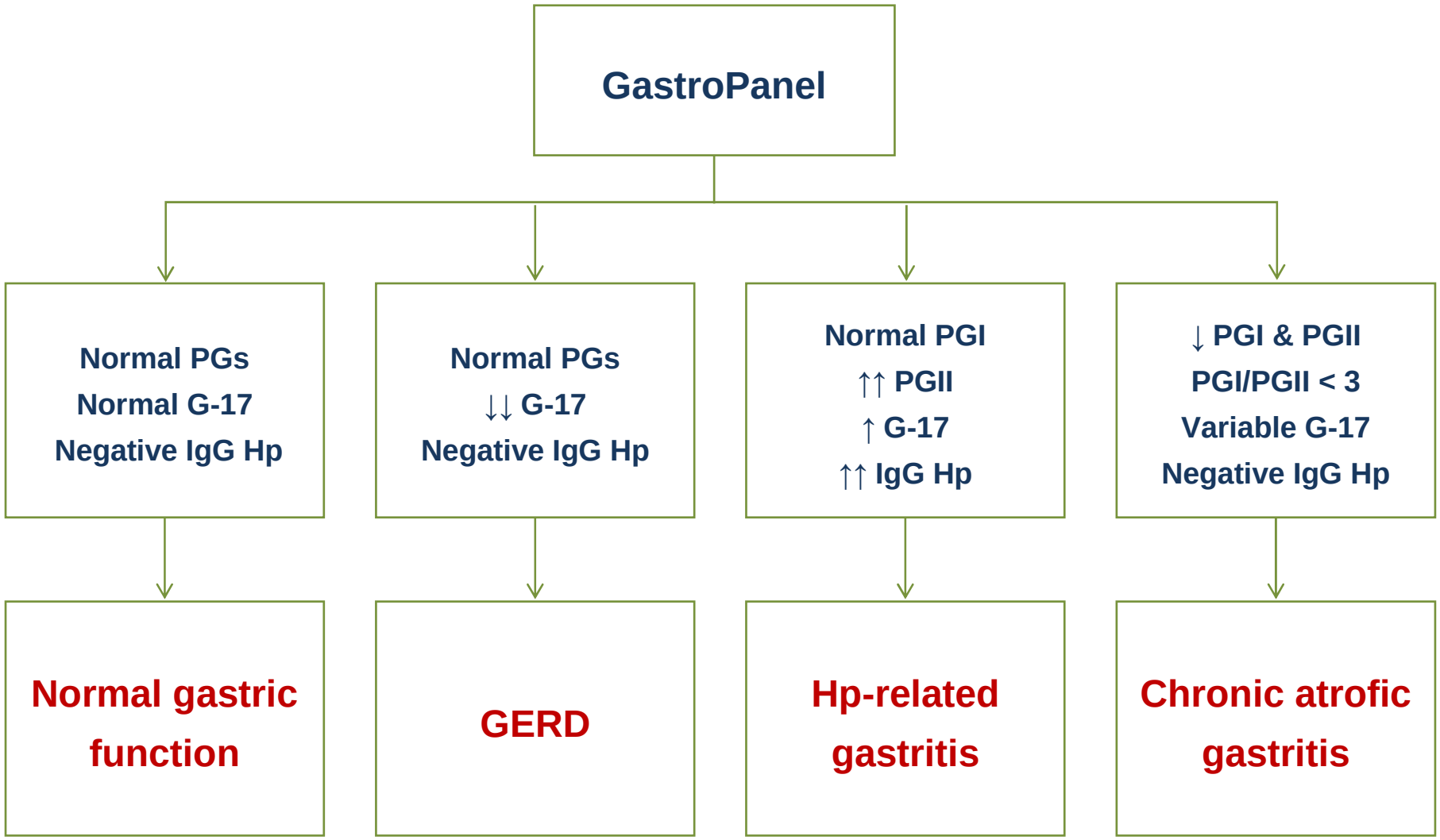


SCREENING OF GASTRITIS IN A POPULATION OF DYSPEPTIC PATIENTS: ROLE OF STOMACH SPECIFIC PLASMA BIOMARKERS

	Normal (N)	Gastroesophageal reflux disease (GERD)	H.pylori gastritis (HPG)	Chronic atrophic gastritis (CAG)
Patients (N°)	132	163	114	20
Age (years)	40.8 ± 22.2	39.6 ± 11.1	42.4 ± 12.4	58.0 ± 15.8
Thyroiditis (%)	6.1	11.7	12.3	50
PG1 (ug/L)	79.4 ± 26.8	84.8 ± 37.7	130.4 ± 11.7	15.2 ± 11.5
PG2 (ug/L)	5.8 ± 2.4	6.2 ± 2.9	14.1 ± 8.2	7.3 ± 3.6
PG1/PG2	14.5 ± 4.3	14.5 ± 4.6	10.0 ± 3.9	2.5 ± 2.5
G17 (pmol/L)	5.4 ± 13.2	0.6 ± 0.3	12.6 ± 15.2	47.4 ± 42.9
Hp Abs (EIU)	5.8 ± 5.9	4.9 ± 5.1	83.9 ± 31.8	29.8 ± 32.8

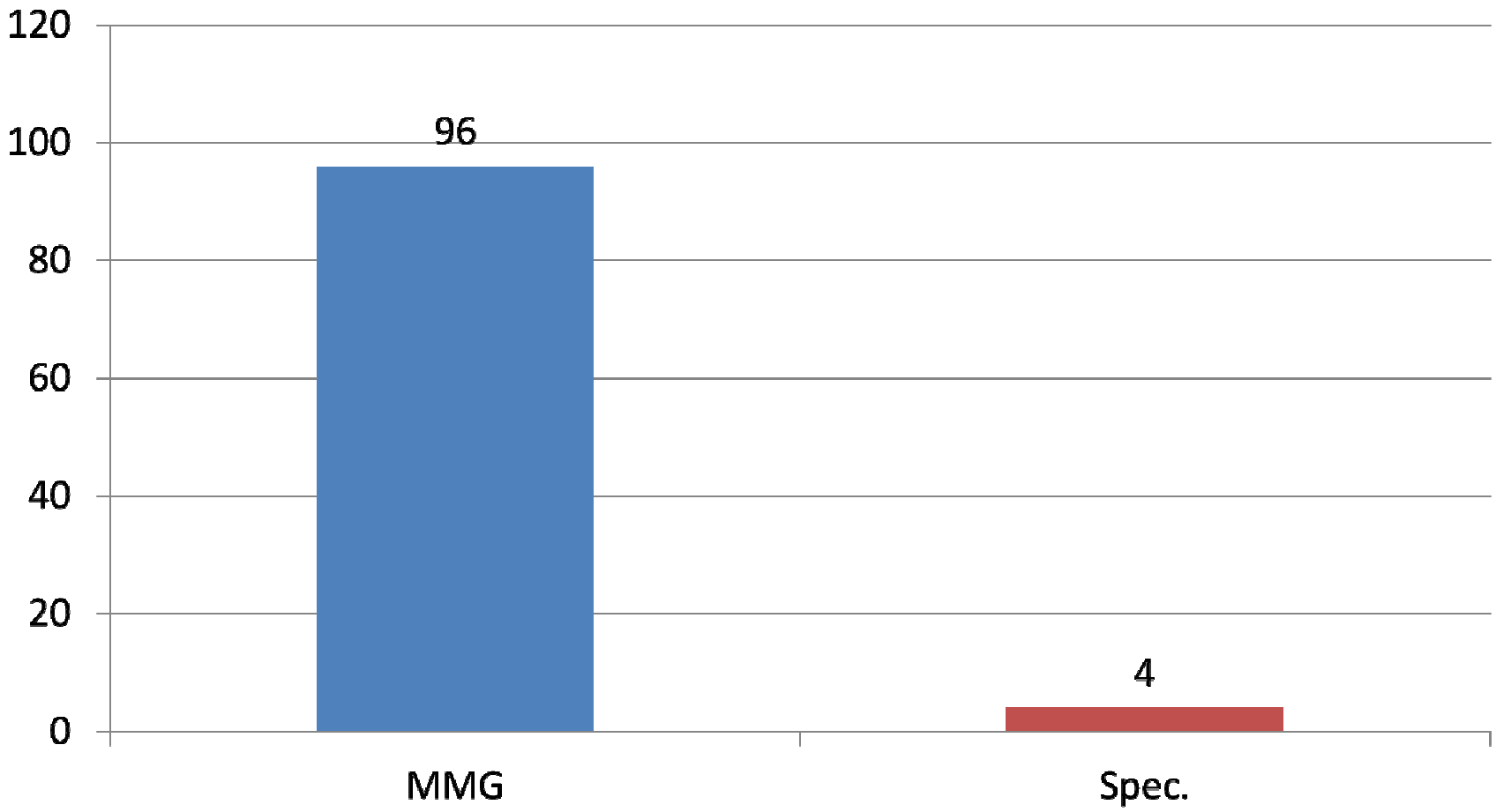
Antico A., Franceschi M. *et al.* ABSTRACT SUBMITTED UEGW 2014

METHODS


GastroPanel
Normal PGs
Normal G-17
Negative IgG Hp
Normal PGs
↓↓ G-17
Negative IgG Hp
Normal PGI
↑↑ PGII
↑ G-17
↑↑ IgG Hp
↓ PGI & PGII
PGI/PGII < 3
Variable G-17
Negative IgG Hp
Normal gastric function
GERD
Hp-related gastritis
Chronic atrofic gastritis

Up to Date Strategy

Treviso

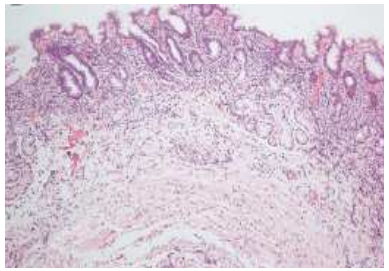


GASTROPANEL IN PATIENTS AFFECTED BY AUTOIMMUNE THYROID DISEASE

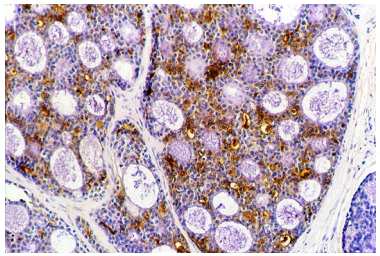
61 pts (Graves, Hashimoto): 18% (11 pts) presented ABG.

	age	Sex	PG I	G-17
1	66	F	6.2	142
2	44	F	1.7	185
3	89	F	19.9	264
4	54	F	24.6	52
5	84	F	14.7	84
6	63	F	18.6	33
7	69	F	23.6	5.6
8	63	F	24	74
9	47	F	13.4	6.2

EGDS of 9 pts:



ABG



ADK

Di Mario F UEGW 2007

UTILIZZO DI GASTROPANEL COME TEST PREDITTIVO DI GASTRITE CRONICA ATROFICA DEL CORPO GASTRICO NEI PAZIENTI CON MALATTIE AUTOIMMUNI DELLA TIROIDE

Rudi De Bastiani, Antonio Tursi, Ignazio Grattagliano, Manuela De Polo, Elisabetta Baldi, Maria Zamparella, Guido Sanna, Enzo Pirrotta, Fabio Bernard, Paolo Bacchin, Laura Boscariolo, Mario Bortot, Giuseppe Polizzi, Lucarelli Maurizio, Francesco Di Mario

Submitted UEGW 2014

INTRODUZIONE

La prevalenza delle tiroiditi autoimmuni nella popolazione generale è alta (5-15%) e spesso è associata ad altre patologie autoimmuni. Una di queste è la gastrite autoimmune, presente in modo asintomatico nel 20-30% dei pazienti con tiroidite autoimmune e nel 2-8% della popolazione generale. La gastrite autoimmune è una condizione precancerosa dello stomaco che incide notevolmente sull'assorbimento di vitamine, oligonutrienti e sulla somministrazione orale di alcuni farmaci. La diagnosi è attualmente viene effettuata tramite la ricerca nel siero di anticorpi contro le cellule parietali gastriche (APCA) e l'istologia.

Gastropanel si compone di quattro parametri: PG-I (pepsinogen-I), PG-II (Pepsinogeno-II), SG-17 (gastrina-17) e gli anticorpi Helicobacter *pylori*. Gastropanel è stato pertanto proposto come test sierologico non invasivo per selezionare i pazienti ad alto rischio di gastrite cronica atrofica, meritevoli di ulteriori indagini endoscopiche. Questo studio è volto ad indagare la presenza di gastrite atrofica cronica in pazienti con tiroidite autoimmune.

OBIETTIVI E METODI

I pazienti (n = 160) con tiroidite autoimmune sono stati estratti dal database di 16 medici di medicina generale. Dopo l'esclusione di cancro della tiroide, l' ipotiroidismo farmaco-indotta, l'incapacità di sospendere PPI e controindicazioni per eseguire l'endoscopia, 145 pazienti (femmine = 130, età media 52 anni) sono stati ulteriormente studiati per le alterazioni gastriche.

APCA e Gastropanel sono stati eseguiti su un prelievo di sangue venoso. PG I / II <3 è stato considerato suggestivo di moderata o grave gastrite cronica atrofica del corpo gastrico e l'indicazione di eseguire una endoscopia del tratto gastrointestinale superiore.

RISULTATI

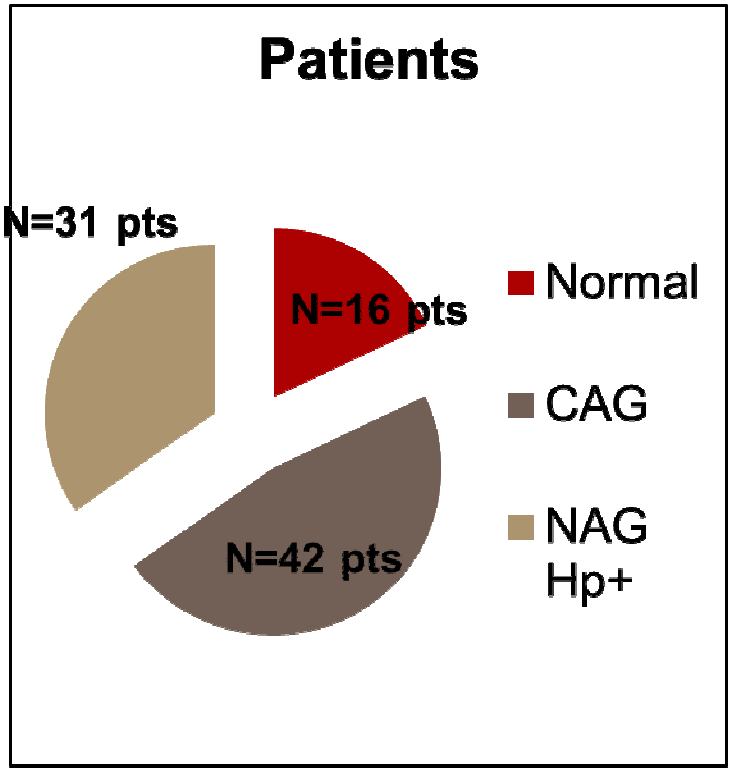
Gli APCA erano positivi in 22 pazienti (15,2%) e PG I / II era <3 in 20 (13,8%) pazienti con tiroidite autoimmune. Quindici pazienti (75%) con PG I / II <3 avevano anche gli APCA positivi. La gastrite cronica atrofica era presente in 24/145 (16,6%) pazienti: 11/22 (50%) APCA positivi, 13/20 (65%) PG I / II <3 e 10/15 (67%) avevano contemporaneamente gli APCA positivi e PG I / II <3. I pazienti (n = 24) con gastrite cronica atrofica all' istologia erano 11/24 (46%) con APCA positivi, 13 pazienti (54%) con PG I / II <3, 10 (42%) positivo e 10 (42%) negativi per entrambi i test.

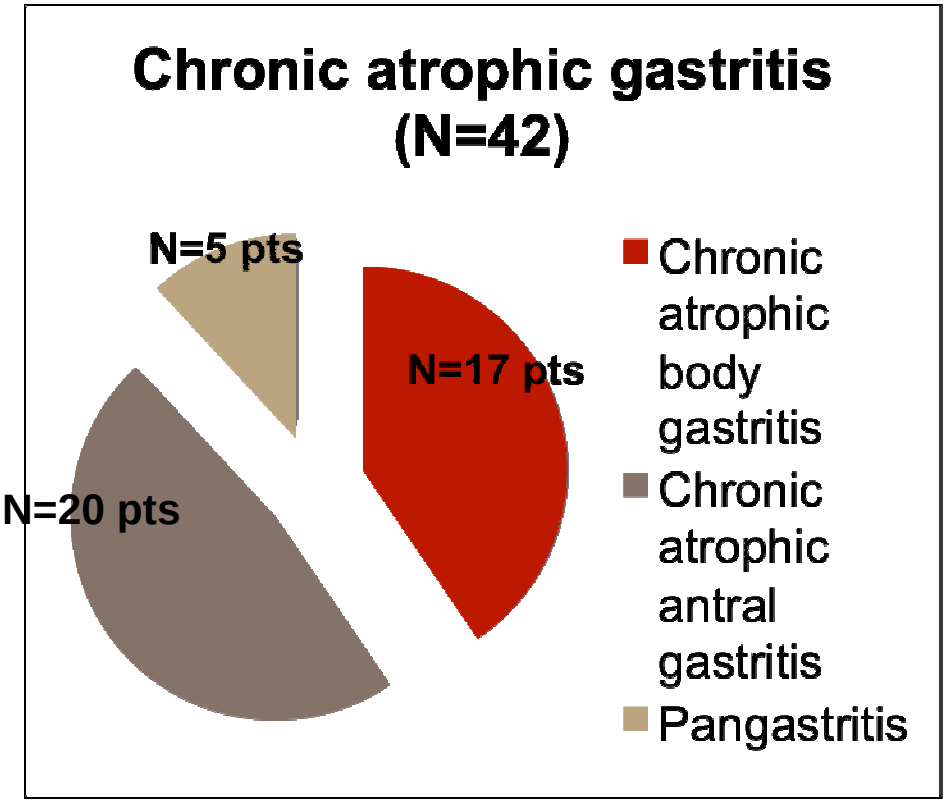
Attraverso una regressione logistica multipla è stato dimostrato che APCA da solo ha un valore predittivo positivo per la gastrite atrofica del 50%, PG I / II <3 ha un valore predittivo positivo del 67%, mentre il PG I / II> 3 aveva un valore predittivo negativo del 86%. La positività sia per APCA che per PG I / II <3 aumenta fino al 69% il valore predittivo positivo per la diagnosi di gastrite cronica atrofica.

CONCLUSIONI

Nonostante il basso numero di pazienti, i risultati indicano che PG I / II <3 ha un valore predittivo superiore APCA per la diagnosi di gastrite cronica atrofica. La presenza contemporanea di entrambi (APCA e PG I / II <3) aumenta il valore predittivo per gastrite cronica atrofica in pazienti con tiroidite autoimmune. Gastropanel, insieme al dosaggio degli APCA, può rappresentare uno strumento non invasivo per selezionare i pazienti che necessitano di endoscopia ed istologia.

VALUTAZIONE DELLA FUNZIONALITÀ GASTRICA ATTRAVERSO GASTROPANEL IN PAZIENTI ANZIANI (ETÀ>80 ANNI) E APPROPRIATEZZA PRESCRITTIVA DEGLI INIBITORI DI POMPA PROTONICA

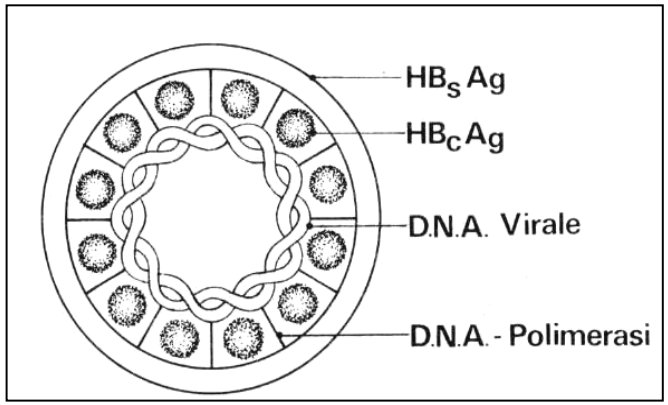




Chronic atrophic body gastritis: PG I <25 µg/L, G-17>10 pmol/L

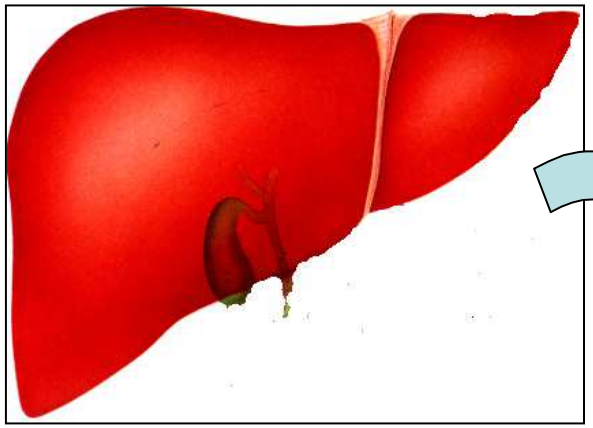
Chronic atrophic antral gastritis: G-17<2 pmol/L under PPIs therapy

Atrophic pangastritis: PG I <25 µg/L and G-17<2 pmol/L

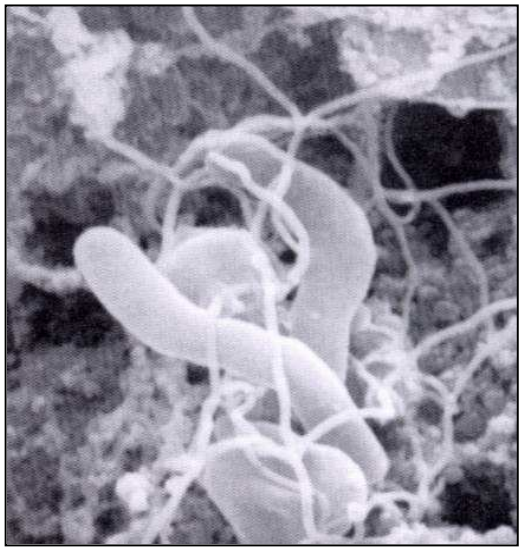


DANE PARTICLE

1970…

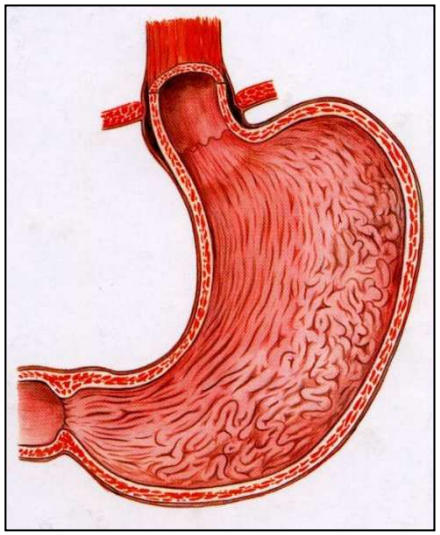


Transaminases, HCV…



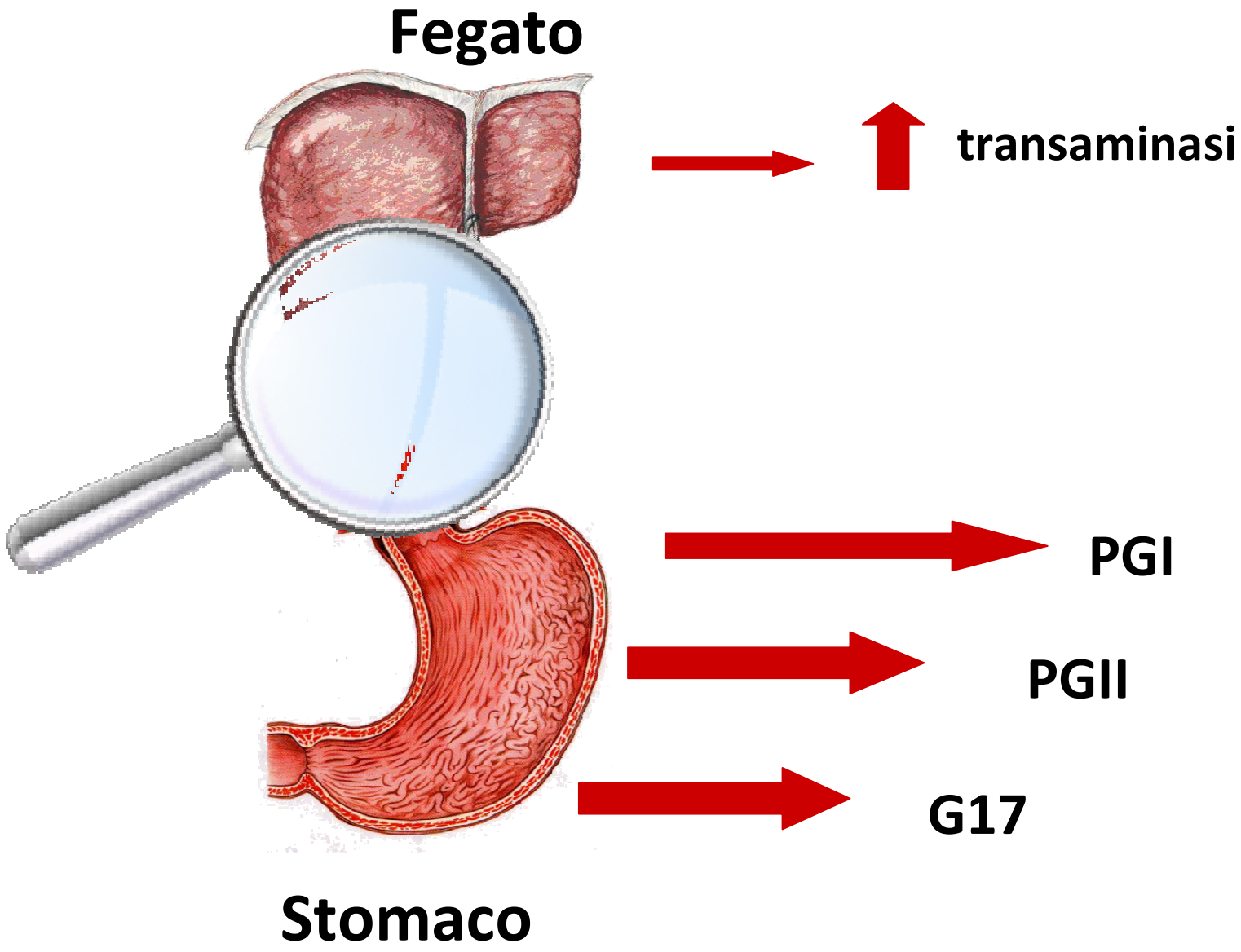
H. pylori

1982…



GASTROPANEL

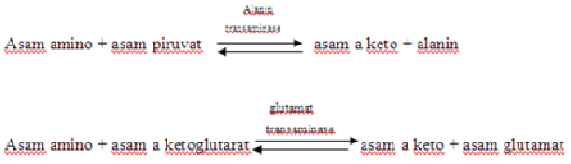
Topografia del danno



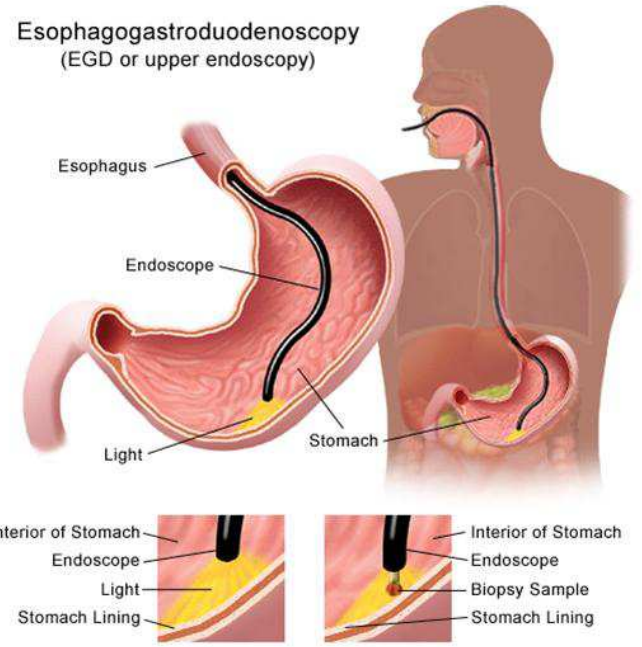
«Fareste mai una biopsia epatica senza avere la sierologia epatica ?

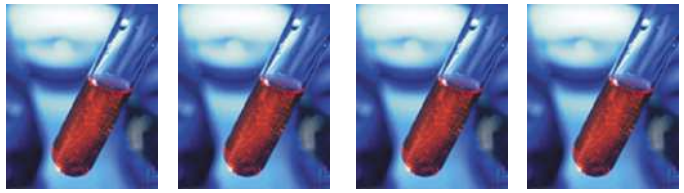
E allora perché si continuano a fare gastroscopie senza conoscere la sierologia gastrica ?»

Rugge M. 2014



AST ALT





GASTROPANEL

GASTROENTEROLOGICAL SOCIETY OF AUSTRALIA

145 Macquarie Street,
SYDNEY. 2000

Telephone 27 3288

17th March, 1983

Dear Dr. Marshall,

I regret that your research paper was not accepted for presentation on the programme of the Annual Scientific Meeting of the Gastroenterological Society of Australia to be held in Perth in May, 1983.

The number of abstracts we receive continues to increase and for this Meeting 67 were submitted and we were able to accept 56.

There were a large number of high quality abstracts which made it extremely difficult to choose those which should be accepted for presentation, and as you know, this is now done by a National Abstract Selection Committee which reviews the abstracts without knowledge of the Authors concerned.

The National Programme Committee would like to thank you for submitting your work, and would hope that this might be re-submitted in the future, perhaps following critical review from your colleagues.

My kindest regards,

for Terry D. Bolin,
Honorary Secretary.

… 67 abstracts submitted, accepted 56. Unfortunately, your abstract was not …