



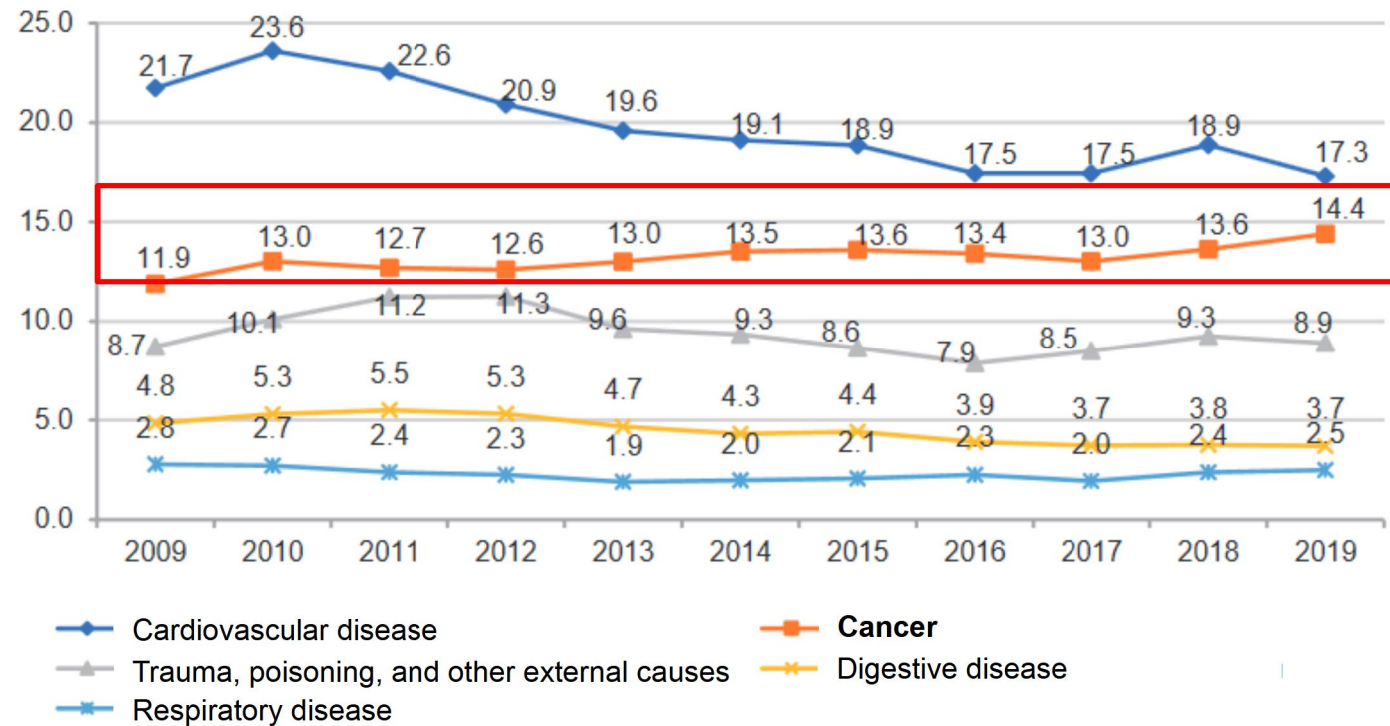
**INSTITUTE
OF MEDICAL
SCIENCES,
MONGOLIA**

RISK FACTORS AND SERUM PEPSINOGENS FOR GASTRIC CANCER IN MONGOLIA: MATCHED CASE-CONTROL STUDY

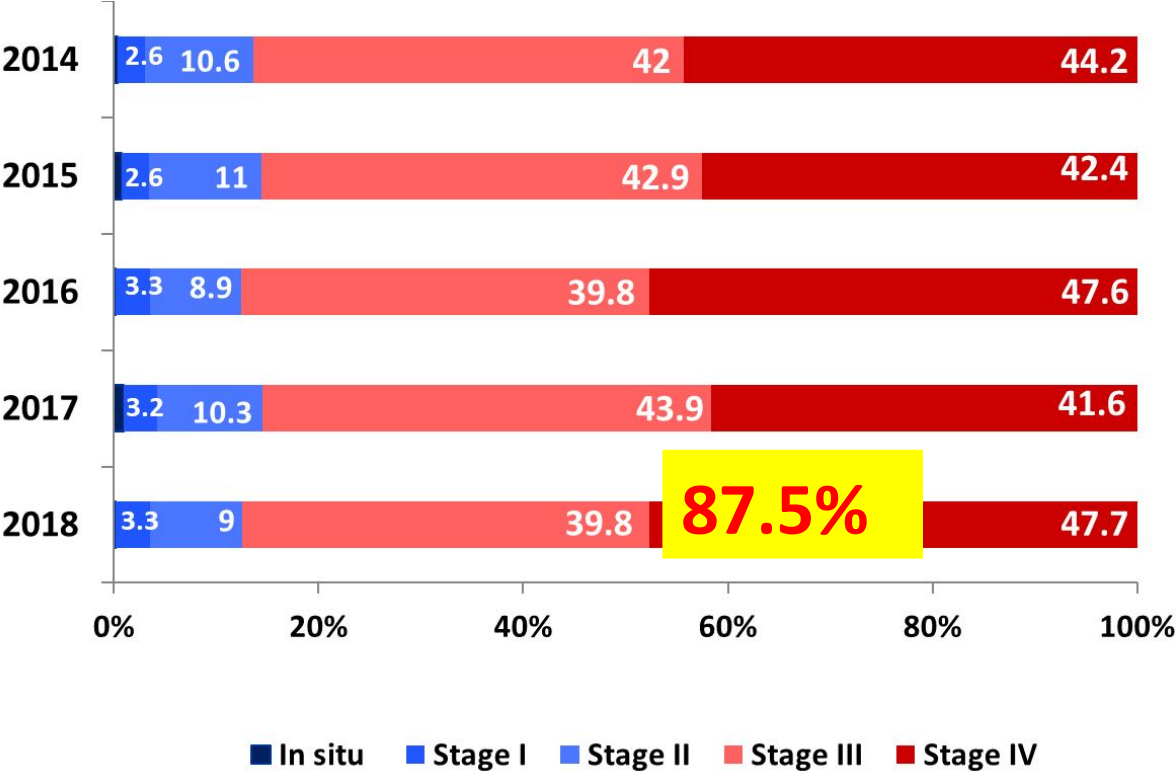
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INTRODUCTION

Estimated rate of five leading causes of mortality, Mongolia, 2009-2019, per 10 000 population, both sexes, all ages



INTRODUCTION



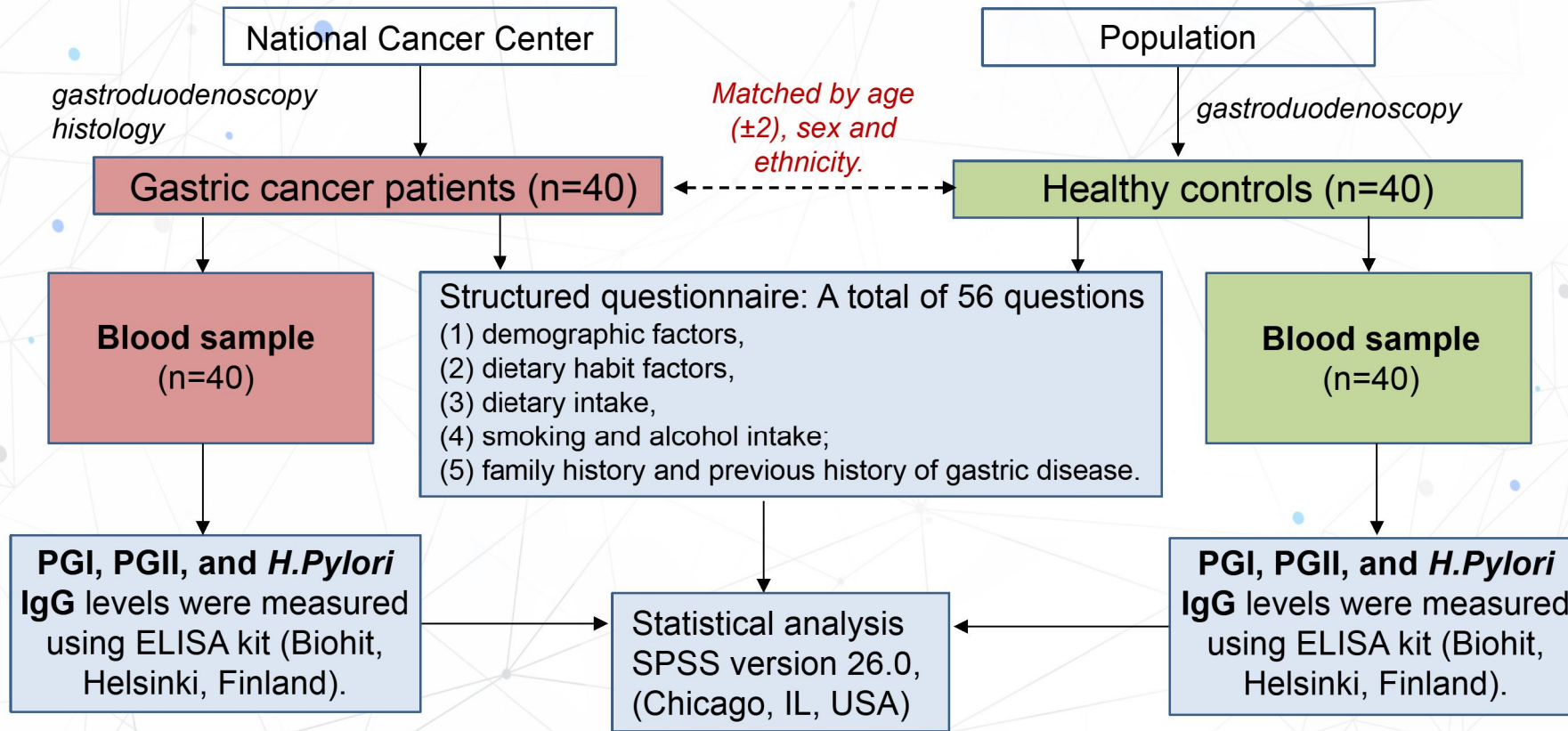
AIM OF THE STUDY

We aimed to identify risk factors of gastric cancer and assess risk by serum markers in Mongolian individuals.

Objectives

- To identify risk factors of gastric cancer among Mongolian individuals
- To validate serum pepsinogen I (PGI), pepsinogen II (PGII), and their ratio (PGI/II ratio) and assess gastric cancer risk by ABC(D) method

METHODOLOGY



METHODOLOGY

PGI, PGII, and *H.Pylori* IgG levels were measured using ELISA kit (Biohit, Helsinki, Finland).

PGI/II ratio was calculated

Statistical analysis
SPSS version 26.0,
(Chicago, IL, USA)

Determined diagnostic
accuracy: cut-off value,
sensitivity and specificity

Assessed risk of
gastric cancer by
ABC(D) method

ABC(D) method		H.Pylori	
		negative	positive
PGI and PGI/II ratio	normal	A	B
	↓	D	C

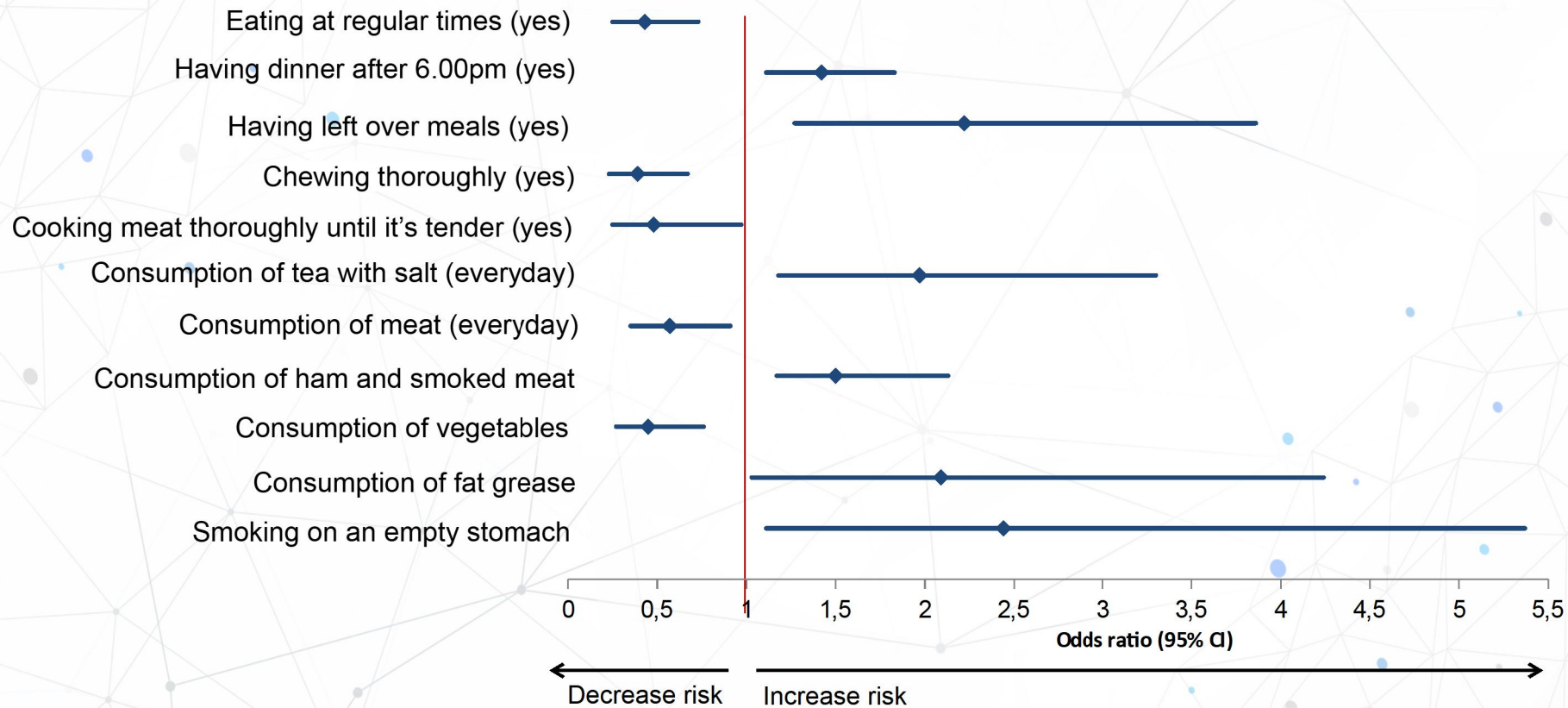
RESULTS

Demographic characteristics of the subjects

Characteristics	Healthy controls	Gastric cancer patients	<i>p value</i>
Age (year, mean±SD)	59.2±11.1	59.1±11.1	0.940
Sex (male, %)	61.7	61.7	1.0
Ethnicity (khalkh, %)	83.2	79.2	0.426
Education (graduated, %)	52.1	45.8	0.332
Body mass index (mean, kg/m ² ±SD)	26.9±4.9	25.6±4.9	0.147
Body mass index (>25, %)	43.8	30.0	0.225
Monthly income, thousand MNT (mean±SD)	860.3±461.3	787.3±600.3	0.386
Blood type (%)			
OI,	34.7	35.6	0.828
All,	28.7	28.7	
BII,	30.7	26.7	
ABIV	5.9	8.9	

RESULTS

Effect sizes how much factors affect gastric cancer



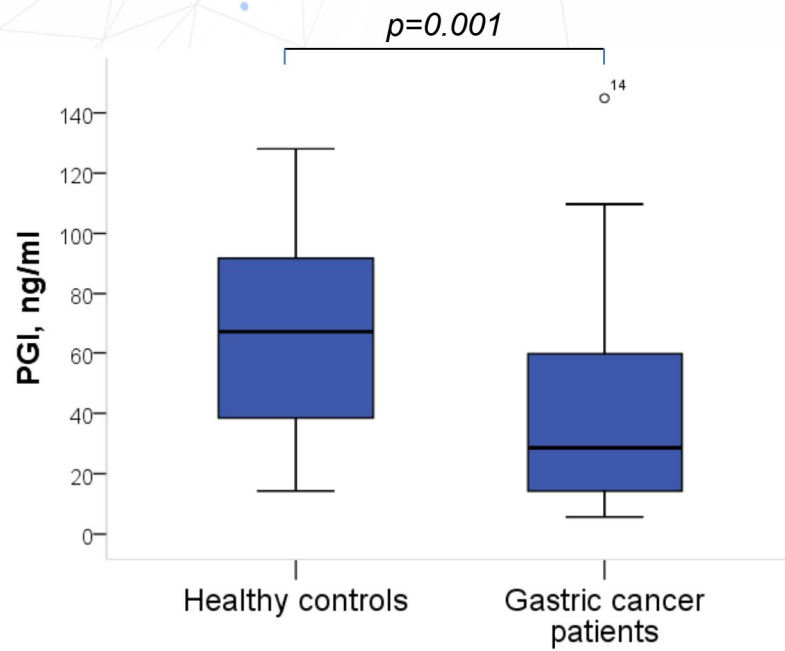
RESULTS

Previous gastric disease records and family history of gastric cancer

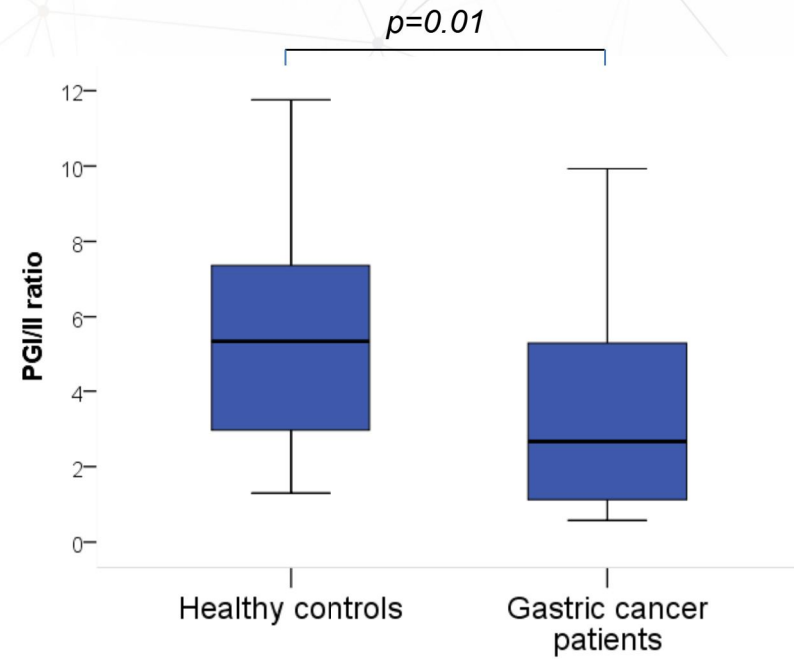
Variables	Healthy controls	Gastric cancer patients	OR (95% CI)	<i>p</i> value
Family history of gastric cancer				
Parents (yes, %)	5.8	15.2	2.88 (1.07-7.78)	0.038*
Sibling (yes, %)	5.5	15.2	3.09 (1.09-8.81)	0.036*
Grandparents (yes, %)	6.5	4.8	0.21-2.43	0.720
Aunt or uncle (yes, %)	0.0	4.8	-	0.062
Cousins (yes, %)	2.5	2.5	0.86 (0.17-4.38)	1.000
History of previous gastric disease				
History of gastric disease (yes, %)	28.1	58.8	3.65 (2.10-6.35)	<0.0001*
Previous records of H.Pylori detection	38.3	41.7	1.15 (0.69-1.93)	0.693
H.Pylori infection (positive, %)	34.8	60.0	2.81 (1.23-6.45)	0.011*

RESULTS

Serum PGI level

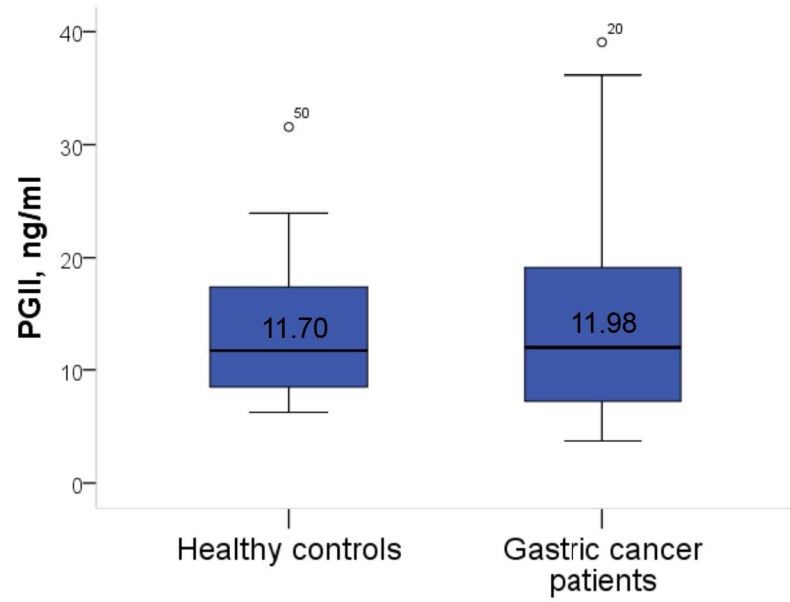


Serum PGI/II ratio level

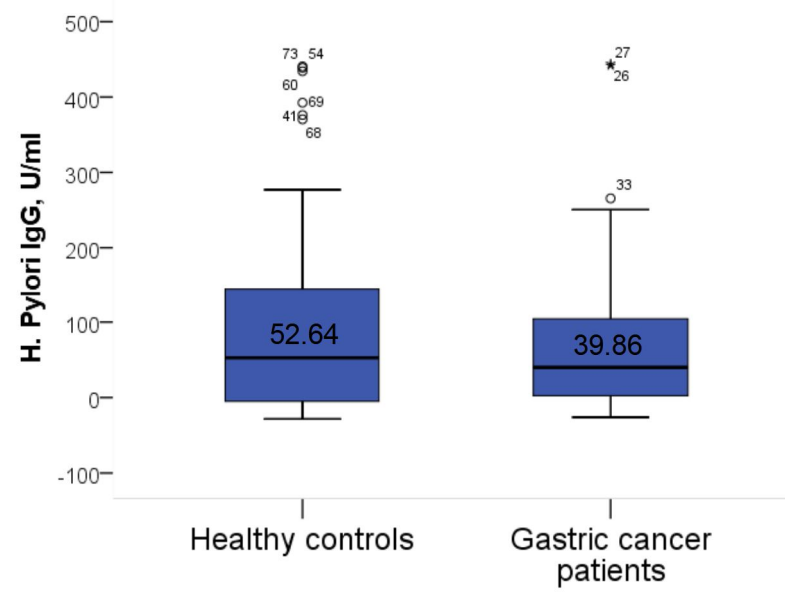


RESULTS

Serum PGII level



Serum H.pylori IgG level



RESULTS

Diagnostic values of serum PGI and PGI/II ratio

	Cut-off value	Sensitivity	Specificity	AUC (95% CI)	<i>p</i> value
PGI	≤35.25 ng/ml	60.7%	80.0%	65.2 (53.0-77.3)	p<0.05
PGI/II ratio	<4.0	67.8%	65.7%	62.7 (50.1-75.3)	p<0.05

RESULTS

Risk assessment of gastric cancer by ABC(D) method

	Group A	Group B	Group C	Group D
Pepsinogen	Normal	Normal	PGI ≤35.25, PGI/II ratio <4	PGI ≤35.25, PGI/II ratio <4
H.Pylori IgG	Negative	Positive	Positive	Negative
Healthy controls	25.7%	40.0%	17.1%	17.1%
Gastric cancer	7.1%	17.9%	35.7%	39.3%
OR (95% CI)		1.61(0.26-10.13)	7.50(1.20-47.05)	8.25(1.33-51.26)
<i>p value</i>		0.614	0.032	0.024

CONCLUSION

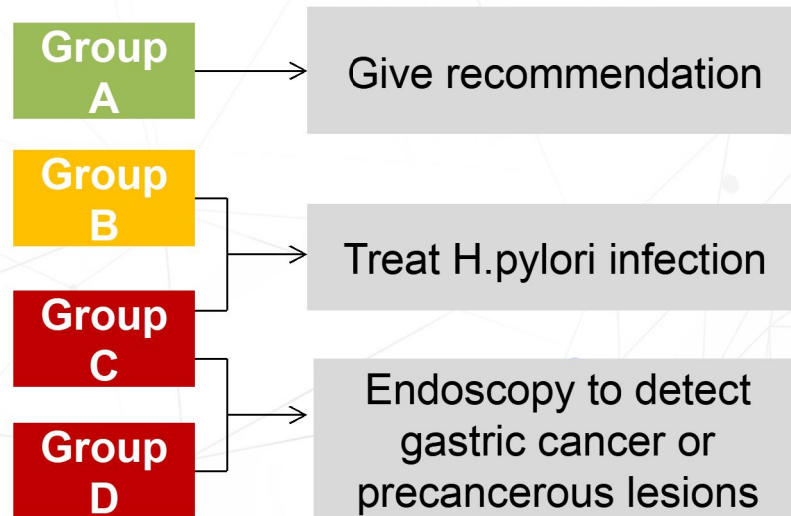
- Gastric cancer is more closely related to eating habits, smoking, family history, and precancerous lesions. Thus, it is important to reduce the incidence of gastric cancer by introducing proper eating habits to the population, diagnosing and treating precancerous lesions early.
- Serum PGs level and *H.pylori* IgG may predict development of gastric cancer and seems to be a alternative or supplementary method for screening of gastric cancer in our country.

IMPLICATION OF THE FIELD

Plausible program for GC prevention means:

- correct dietary habit since childhood increasing vegetables and fruit intake,
- search and treat H. pylori infection and precancerous lesions
- careful endoscopic and histologic follow-up if precancerous lesions detected by serum markers.

		H.Pylori	
		negative	positive
PGI and PGI/II ratio	normal	A	B
	↓	D	C



THANK YOU FOR YOUR ATTENTION



Please contact us: nominerdene.ims@mnums.edu.mn