



Characteristics of peptic ulcer in military officers/soldiers: a preliminary analysis

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To the editor,

Peptic ulcer disease consists of gastric and duodenal ulcers. Gastrointestinal symptoms such as epigastric pain, fullness, bloating, and early satiety, are the main clinical manifestations. Chronic ulcers can also be asymptomatic. Marshall and Warren for the first time found that peptic ulcer was the only endoscopic finding associated with histological gastritis and *Helicobacter pylori* (1). Current evidence supported the association of *Helicobacter pylori* with peptic ulcers (2). Additionally, in patients with pylori-negative ulcer disease, non-steroidal anti-inflammatory drugs and aspirin are considered to be another important cause of this disease (3). Hemorrhage is the most frequent complication of peptic ulcers, followed by perforation with the highest mortality (4). In patients with peptic ulcer, it was reported that there were 19.4–57.0 per 100,000 individuals complicated with hemorrhage (5), of which the risk was the highest among people over 60 years of age (6). The incidence of perforation was 3.8–14 per 100,000 individuals (5). Mortality among 30 days associated with peptic ulcer hemorrhage was 1.7% in Scotland (7) and 10.7% in Denmark (8). Mortality among 30 days associated with peptic ulcer perforation was 10.7% in Singapore (9) and 27.0% in Sweden (10), respectively. Until now, few study has explored the characteristics of peptic ulcers in military officers/soldiers, who are a special population always at a stress state.

Herein, we conducted a preliminary retrospective observational study to compare the differences of clinical characteristics and treatment between officers/soldiers and

general civilians with peptic ulcer. We enrolled the patients who were diagnosed with peptic ulcer at the Department of Gastroenterology of the Shenyang General Hospital of Military Area and treated by an attending physician, Dr. Xingshun Qi, between January 2016 and October 2017. Data included sex, age, past disease history, clinical presentations, laboratory tests, medication, and in-hospital outcome. Patients were classified as military officers/soldiers and general civilians. Continuous variables were expressed as mean \pm standard deviation (SD), and categorical variables were expressed as frequency (%). Continuous variables were tested by the independent sample t-test and categorical variables were analyzed by the chi-square test. $P < 0.05$ was considered as significant statistical difference. Statistical analyses were performed by using by SPSS version 20.0.0 software (SPSS Inc., Chicago, IL, USA).

A total of 53 patients were included in the study, including 7 military officers/soldiers and 46 general civilians (Table 1). Compared with general civilians with peptic ulcers, military officers/soldiers with peptic ulcers were significantly younger ($P = 0.003$) and had a shorter duration of smoking history ($P = 0.002$), a higher albumin level ($P = 0.012$), and a smaller amount of blood transfused ($P = 0.010$). In addition, military officers/soldiers with peptic ulcers had a higher prevalence of *Helicobacter pylori* infection and a lower prevalence of liver cirrhosis and malignant tumors, but the difference was not statistically different.

On the basis of such a preliminary study, we could identify the characteristics of military officers/soldiers with

Table 1 Comparison between military officers/soldiers and general civilians

Variables	Military officers/soldiers		General civilians		P value by t-test or χ^2 test
	No. Pts	Mean \pm SD or frequency (%)	No. Pts	Mean \pm SD or frequency (%)	
Age (years)	7	38.57 \pm 21.33	46	57.62 \pm 13.81	0.003
Sex (male/female)	7	6 (85.7)/1 (14.3)	46	32 (69.6)/14 (30.4)	0.377
Duodenal ulcer	7	6 (85.7)	46	26 (56.5)	0.141
Gastric ulcer	7	1 (14.3)	46	22 (47.8)	0.095
Helicobacter pylori infection	7	4 (57.1)	46	9 (19.6)	0.064
Malignant tumor	7	0 (0)	46	9 (19.6)	0.199
Liver cirrhosis	7	0 (0)	46	6 (13.0)	0.31
Gastrointestinal bleeding	7	3 (42.9)	46	19 (41.3)	0.938
Gastroesophageal varices	7	0 (0)	46	7 (15.2)	0.268
History of peptic ulcer	7	1 (14.3)	46	15 (32.6)	0.325
History of surgery for peptic ulcer	7	0 (0)	46	3 (6.5)	0.487
Prior use of NSAIDs	7	1 (14.3)	46	15 (32.6)	0.325
History of smoking	7	2 (28.6)	46	19 (41.3)	0.521
Duration of smoking (years)	7	2.14 \pm 5.24	46	12.70 \pm 16.80	0.002
Number of cigarettes per day	7	2.86 \pm 4.88	42	6.31 \pm 10.77	0.395
White blood cell (10^9 /L)	7	6.54 \pm 0.95	46	7.51 \pm 3.58	0.344
Neutrophil (%)	7	59.33 \pm 10.63	46	66.89 \pm 10.96	0.094
Neutrophils (10^9 /L)	7	3.93 \pm 1.08	46	4.96 \pm 2.97	0.098
Lymphocyte (%)	7	30.76 \pm 12.22	46	23.70 \pm 10.18	0.102
Lymphocytes (10^9 /L)	7	1.97 \pm 0.75	46	1.58 \pm 0.86	0.265
Red blood cell (10^9 /L)	7	4.2514 \pm 0.68	46	3.75 \pm 1.02	0.217
Hemoglobin (g/L)	7	125.57 \pm 31.99	46	111.78 \pm 30.92	0.279
Hematocrit (%)	7	37.81 \pm 9.19	46	33.87 \pm 9.26	0.299
Platelet (10^9 /L)	7	263.14 \pm 72.53	46	219.83 \pm 131.50	0.401
Mean platelet volume (fL)	7	7.96 \pm 0.44	46	8.44 \pm 3.32	0.703
Total bilirubin (umol/L)	7	15.89 \pm 9.57	46	17.83 \pm 16.04	0.757
Direct bilirubin (umol/L)	7	5.47 \pm 3.08	46	7.56 \pm 10.55	0.608
Alanine aminotransferase (U/L)	7	15.89 \pm 5.68	46	35.16 \pm 70.70	0.478
Aspartate aminotransferase (U/L)	7	17.13 \pm 4.65	46	32.29 \pm 37.64	0.296
Alkaline phosphatase (U/L)	7	68.46 \pm 24.16	46	91.34 \pm 45.39	0.2
Glutamyl transpeptidase (U/L)	7	19.33 \pm 11.11	46	53.69 \pm 101.75	0.38
Total bile acid (umol/L)	7	4.97 \pm 2.69	46	11.03 \pm 14.18	0.268
Pre-albumin (mg/L)	7	225.81 \pm 57.81	46	193.08 \pm 82.84	0.32

Table 1 (continued)

Table 1 (continued)

Variables	Military officers/soldiers		General civilians		P value by <i>t</i> -test or χ^2 test
	No. Pts	Mean \pm SD or frequency (%)	No. Pts	Mean \pm SD or frequency (%)	
Total protein (g/L)	7	66.77 \pm 7.47	46	62.52 \pm 9.23	0.251
Albumin (g/L)	7	42.30 \pm 4.87	46	35.12 \pm 7.00	0.012
Blood urea nitrogen (mmol/L)	7	7.28 \pm 2.89	46	7.33 \pm 4.12	0.976
Serum creatinine (μ mol/L)	7	75.91 \pm 17.37	46	72.03 \pm 24.68	0.691
Cystatin C (mg/L)	7	0.69 \pm 0.20	46	0.92 \pm 0.43	0.176
Blood transfusion	7	0 (0)	46	9 (19.6)	0.199
Amount of red blood cells transfused (unit)	7	0 \pm 0	45	0.45 \pm 1.11	0.010
Type of proton pump inhibitors					
Use of esomeprazole	7	6 (85.7)	46	33 (71.7)	0.435
Use of pantoprazole	7	2 (28.6)	46	14 (30.4)	0.92
Use of omeprazole	7	0 (0)	46	1 (2.2)	0.694
Use of somatostatin or octreotide	7	1 (14.3)	46	16 (34.8)	0.279
Death during hospitalization	7	0 (0)	46	0 (0)	NA

peptic ulcers. Military officers/soldiers are diagnosed with peptic ulcers when they are younger. In spite of better outcomes, we would like to indicate that the recurrence of peptic ulcer might be more common due to a higher prevalence of *Helicobacter pylori* infection and stress exposure. In future, the sample size should be expanded to further confirm the present findings.

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aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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