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A Prospective Clinical Study of Presentation and Outcome of Perforated Peptic Ulcer Disease

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ABSTRACT

Background

Peptic ulcer disease is described as an injury to the upper digestive tract's mucosa that causes ulcers to spread into the sub mucosal layers beneath the mucosa. Peptic ulcer stypically develop in the stomach and duodenum, though they can also develop in the esophagus or Meckel's diverticulum[1]. Acute perforation of peptic ulcer is relativelya common complication[2]. Patients with perforated peptic ulcers (PPU) frequently arrive with an acute abdomen, which has a high risk for morbidity and mortality.

Materials and Methods

The study was conducted in the Department of General surgery, Great Eastern Medical School and Hospital Between September 2022 To September 2023. 50 Patients were included in the study. Data were collected from all patients. Patient's age and sex were noted, history was obtained, and thorough clinical examination was performed. Investigations like x-ray erect abdomen, Ultrasonography and CT abdomen done if necessary. Patients underwent surgery. The details of all the patients were collected and analyzed.

Result

Peptic ulcer disease is most common in age group of 40-49 years. Alcohol intake and smoking are risk factors of peptic ulcer disease. 72% of patients had

history of NSAID abuse and 40% had history of spicy food intake and 30% had irregular food habits.90% patients had H. pylori infection. Duodenal perforation was more common than gastric perforation.80% had no post operative complications. 14% had postoperative complications and mortality is 6%.

Keywords

Peptic ulcer, stomach and duodenum, mortality.

INTRODUCTION

Peptic ulcer disease is described as an injury to the upper digestive tract's mucosa that causes ulcers to spread into the sub mucosal layers beneath the mucosa. Peptic ulcers typically develop in the stomach and duodenum, though they can also develop in the esophagus or Meckel's diverticulum[1.]

The acute aperture of peptic ulcer is moderately a common complication[2].

Patients with perforated peptic ulcers (PPU) frequently arrive with acute guts, which have a high hazard for horribleness and mortality[3]. It is one of the major results of PUD[3].

Typically, patients with peptic ulcer puncturing report unexpected, agonizing epigastric pain. Initially localized torment before long spreads to other areas of the body[4].

Patients frequently experience syncope or a swirling sensation in their heads as a result of blood loss-related hypotension or SIRS (systemic provocative reaction syndrome)/sepsis. Indeed even though it can still be duplicated by movement, stomach torment may quickly after numerous hours [5].

Despite the procedure, there is some associated morbidity and mortality. The non-operative strategy, which Wangensteen to begin with recommended in 19356, is secure and fruitful in a few patients[7].

MATERIALS AND METHODS

Study Design: A hospital-based prospective observational study.

Study Sample: 50 cases.

Source of Sample: Patients with signs and symptoms of perforation admitted to the General Surgery department, GEMS, Srikakulam.

Method: Patients diagnosed with perforated peptic ulcer disease will be selected randomly and studied.

Inclusion Criteria: All diagnosed patients of perforated peptic ulcer.

Exclusion Criteria: Patients with gastro duodenal perforation with a history of any kind of penetrating or blunt abdominal trauma.

Observations and Results: 50 cases of perforation secondary to peptic ulcer disease patients were studied.

Age distribution: In my study of 50 patients with gastro duodenal perforations, it was more common in the 40 – 49 years age group, followed closely by 20 to 29 years.

Chart 1: Age Distribution

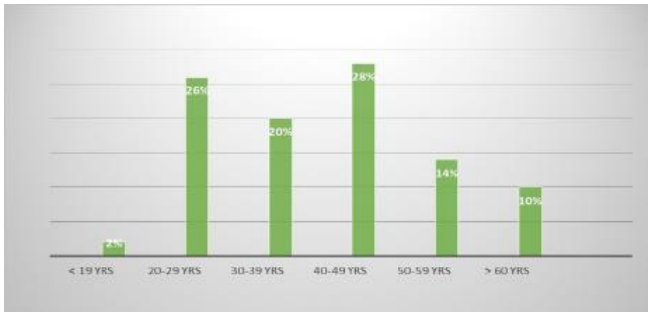
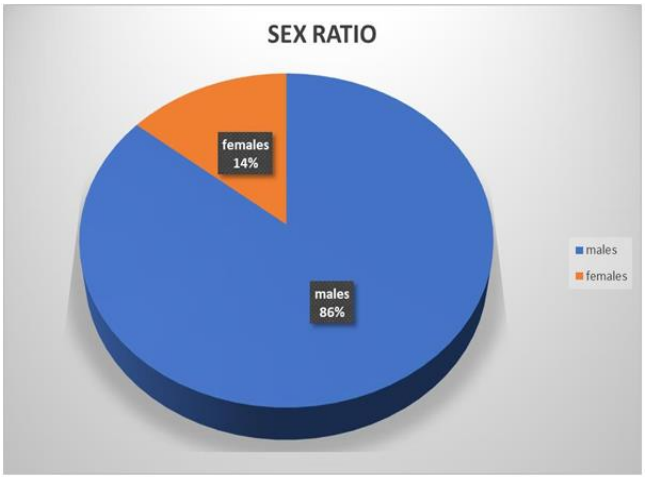


Table1: Age Incidence

Age	No. Of Cases	Percentage %
<19YRS	1	2%
20-29YRS	13	26%
30-39YRS	10	20%
40-49YRS	14	28%
50-59YRS	7	14%
>60YRS	5	10%

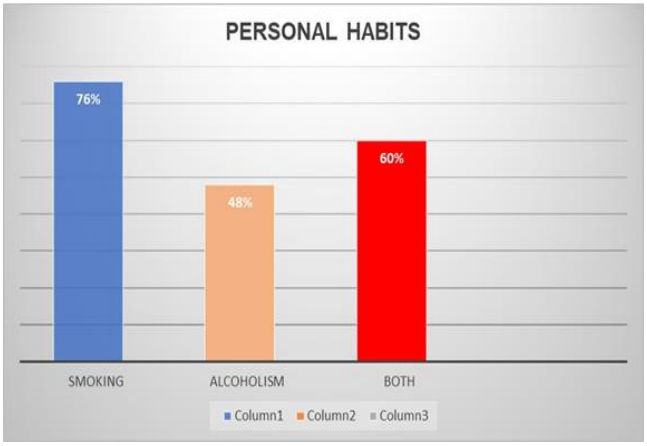
Sex: Out of 50 patients 43 were male patients with ratio of 86% and females were 7, comprising 14%.

Chart 2: pie chart of sex distribution



Personal Habits: In our study 38 patients are chronic smokers 24 patients are chronic alcoholics 30 patients both alcoholic and smokers.

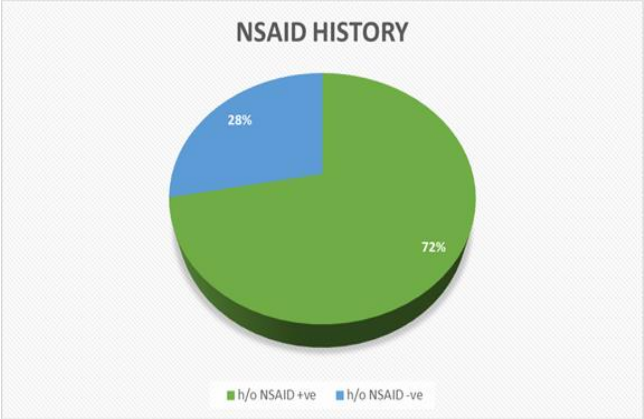
CHART 3: histogram showing personal habit sand relation



NSAID Intake History

In our study 36patientshave given history of drug intake before developing gastric ulcer perforation.

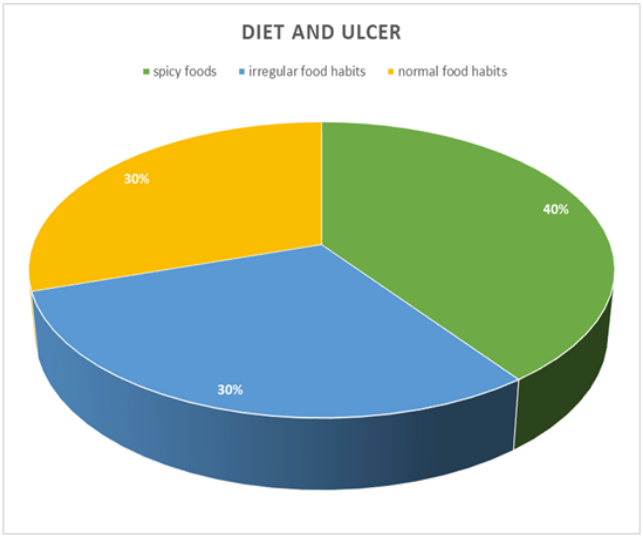
Chart 4: Piediagram showing relation with NSAID abuse



Relation with Diet

In my study, 40% of patients were having spice rich foods, 30% were having irregular food habits for a long period of time of having only 1 to 2 meals per day leading to risk of developing perforations.

Chart 5: Piediagram showing relation with diet

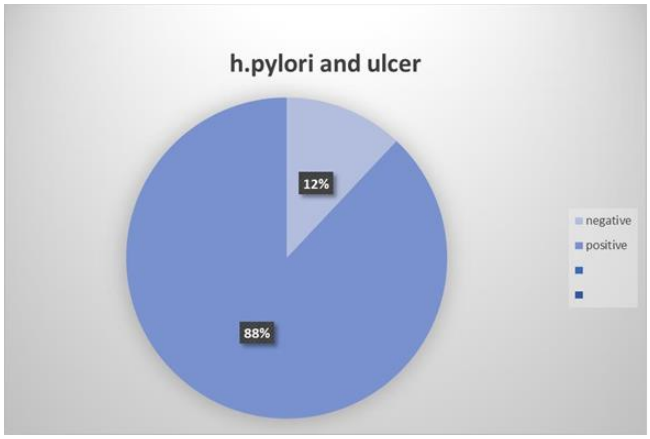


Relation With H. Pylori: In my study, 90% patients were positive for H. Pylori and only 10 % were negative suggesting high association of H. Pylori with gastro duodenal perforations.

Table2: Incidence of H. Pylori

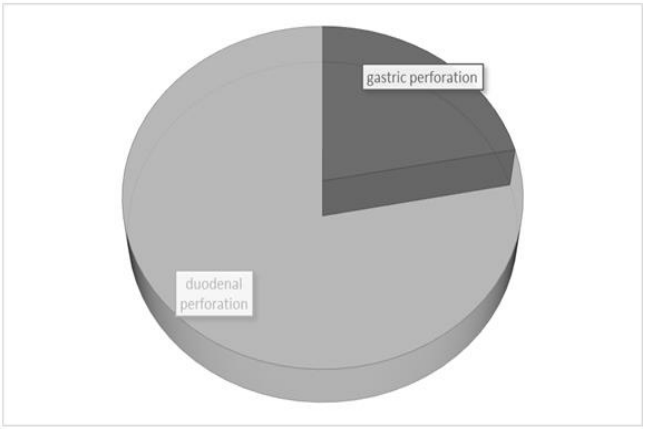
H. Pylori	Frequency	Percentage
negative	6	12%
positive	44	88%
total	50	100%

Chart 6: Piediagram showing relation with H. Pylori infection



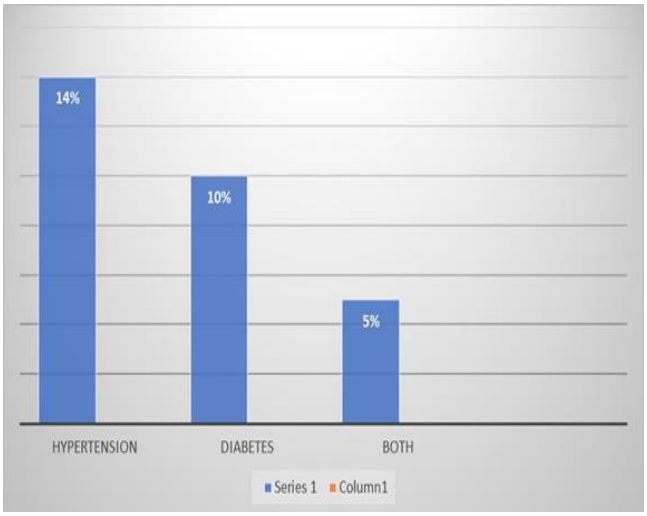
Site of Perforation Duodenal perforation was more common than gastric perforation.11patients had gastric perforation out of 50 patients.

Chart 7: Piediagram showing site predilection



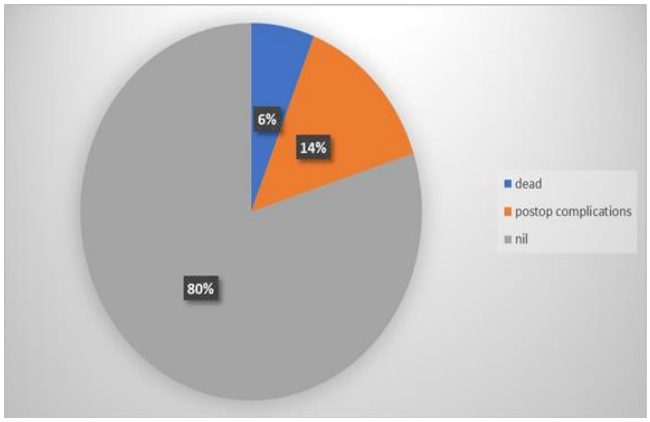
Associated Co-morbidities: Among 50 patients13 patients had associated illnesses like diabetes and hypertension and were on irregular medication.

CHART 8: Histogram showing associated illnesses



Mortality In Post Opperiod: 3 patients out of 50 patients were dead on different postoperative periods, 7 patients had morbidity like surgical site infections, burst abdomen, enterocutaneous fistula.

Chart 9: Piediagram showing mortality and morbidity



DISCUSSION

In my study of individuals with peptic ulcer perforations, men were more frequently impacted than women, despite the fact that perforations have recently increased among older persons, particularly females who abuse NSAIDS. The predominance of risk factors among men, such as smoking and alcohol use, may be the cause of this.

H. Pylori was found to be the main culprit in my investigation when it came to gastro duodenal perforations. Nearly 50% of the world's population has H. Pylori, & the majority of cases occur in young children. In addition to perforating peptic ulcers, H. pylori is linked to numerous other disorders. It is more prevalent in low socioeconomic status and among people with poor hygiene.

Despite not being preventable, h. pylori can be treated and eliminated with the help of proper medical interventions. People should be made aware of the importance of better sanitary hygiene, and anyone experiencing dyspepsia or a peptic ulcer should have an upper gastrointestinal endoscopy to check for the existence of h. pylori. Patients who had a laparotomy for perforations after surgery should also be on an anti-H. Pylori regimen and should have upper GIendoscopies performed on a regular basis.

Due to the smaller sample size in my study, the association between h. pylori and gastro duodenal perforations was not statistically significant. This issue can be overcome by choosing a bigger group of samples.

Smoking was identified as one of the main risk factors for gastroduodenal perforations in my investigation. Young adults should been courage to break this anti-social tendency for the sake of their own well being. Patients should be mentally prepared to stop smoking with support from friends, family, and themselves.

Three patients, one female patient and two male patients succumbed to death on different post operative days. The reasons being that they presented late to the hospital, and had associated comorbid conditions –both hypertension and diabetes and were on irregular medication.

Even though the attendants were counselled about the early mobilisation, wound care like regular bathing, and proper nutrition, none of them encouraged them due to cultural and misbeliefs, which led to seven patients having various problems like operating site infections like wound dehiscence, burst abdomen, and enterocutaneous fistula.

CONCLUSION

- Among the 50 patients, the most common age group is 40-49 years followed by 20-29 years with 28% and 26% respectively.
- With a ratio of 6.1:1, males are more frequently affected than females.
- Different personal habits played a key role in causing pepticulcer which finally led to perforation like smoking, alcoholism and both in some patients. smoking has the highest risk followed by both smoking and alcoholism and finally alcoholism alone. But the percentage of people consuming is high.
- NSAID abuse is seen in many patients as high as 72%as most of them are females.
- Food habits also played a key role in causing the peptic ulcer disease in my study. Most patients used to have spicy foods and irregular food habits.
- Patients with concomitant conditions including diabetes and hypertension experienced serious postoperative consequences. Three patients died from uncontrolled diabetes. The proportion of patients with early malnutrition experienced negative post-operative sequelae like wound dehiscence and enterocutaneous fistula.
- Since many of the patients in my study have H. pylori positivity, the majority of the patients are from low socio economic backgrounds, which may contribute to H.pylori infection.
- Eight of them presented late after 4 days of first episode of pain, of which two patients needed prolonged intubation and died on post op day 4 and 5 respectively.
- Finally, the peptic ulcer disease is a preventable disease by stopping smoking, alcohol, irregular food habits, personal hygiene thus preventing the transmission of H.pylori infection, early presentation to hospital and proper nutrition after surgery improves the outcome of the patient.

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S.NO	PATIENT IP NO.	SEX	AGE	SMOKING	ALCOHOLISM	H.PYLORI	DIET	COMORBIDITIES	NSAID ABUSE	POST OP COMPLICATION	MORTALITY
1	20123217	M	43 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	HYPERTENSIVE	ABSENT	ABSENT	NO
2	20126739	F	55 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	DIABETIC	PRESENT	PRESENT	DEAD
3	21011158	M	34 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
4	21013995	M	23 YRS	ABSENT	PRESENT	ABSENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
5	21025748	M	48 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	HYPERTENSIVE	ABSENT	ABSENT	NO
6	21029551	M	39 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	DIABETIC	ABSENT	ABSENT	NO
7	21036543	F	59 YRS	ABSENT	ABSENT	PRESENT	SPICY FOODS	NIL	PRESENT	PRESENT	NO
8	21037742	M	18 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
9	21039111	M	35 YRS	ABSENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
10	21039331	M	39 YRS	PRESENT	ABSENT	PRESENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
11	21044209	F	40 YRS	PRESENT	ABSENT	ABSENT	IRREGULAR DIET	NIL	PRESENT	ABSENT	NO
12	21046645	M	53 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	HYPERTENSIVE	ABSENT	ABSENT	NO
13	21082119	M	25 YRS	ABSENT	ABSENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
14	21091009	M	74 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	DIABETIC	ABSENT	ABSENT	DEAD
15	21094890	M	29 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
16	21093323	M	55 YRS	PRESENT	PRESENT	ABSENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
17	21107768	F	45 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
18	21108989	M	21 YRS	ABSENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
19	21109000	M	72 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	HYPERTENSIVE	ABSENT	ABSENT	NO
20	21111234	M	28 YRS	ABSENT	ABSENT	PRESENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
21	21114538	M	46 YRS	PRESENT	PRESENT	ABSENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
22	21120008	M	39 YRS	ABSENT	PRESENT	ABSENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
23	21127309	M	38 YRS	PRESENT	ABSENT	ABSENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
24	21228976	M	69 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	HYPERTENSIVE	PRESENT	PRESENT	DEAD
25	22010071	M	57 YRS	PRESENT	ABSENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
26	22010389	M	48 YRS	PRESENT	ABSENT	PRESENT	IRREGULAR DIET	NIL	PRESENT	ABSENT	NO
27	22011076	M	35 YRS	ABSENT	PRESENT	PRESENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
28	22012341	F	65 YRS	PRESENT	ABSENT	PRESENT	IRREGULAR DIET	DIABETIC	PRESENT	PRESENT	NO
29	22015546	M	28 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	HYPERTENSIVE	ABSENT	ABSENT	NO
30	22010998	M	77 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	HYPERTENSIVE	ABSENT	ABSENT	NO
31	22021000	M	23 YRS	ABSENT	PRESENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
32	22013245	M	49 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
33	22023333	M	59 YRS	PRESENT	ABSENT	PRESENT	IRREGULAR DIET	DIABETIC	PRESENT	PRESENT	NO
34	22026543	M	46 YRS	PRESENT	PRESENT	PRESENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
35	22027654	M	36 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
36	22029910	F	41 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
37	22035432	M	25 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
38	22036100	M	42 YRS	PRESENT	PRESENT	PRESENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
39	22037554	M	22 YRS	ABSENT	ABSENT	PRESENT	SPICY FOODS	NIL	ABSENT	ABSENT	NO
40	22038976	M	37 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
41	22041890	M	44 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
42	22042209	M	28 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
43	22045123	F	40 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
44	22046775	M	29 YRS	PRESENT	PRESENT	PRESENT	NORMAL DIET	NIL	PRESENT	ABSENT	NO
45	22047659	M	43 YRS	PRESENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	PRESENT	NO
46	22056743	M	29 YRS	ABSENT	PRESENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
47	22059807	M	33 YRS	PRESENT	PRESENT	PRESENT	NORMAL DIET	NIL	ABSENT	ABSENT	NO
48	22061234	M	50 YRS	PRESENT	ABSENT	PRESENT	IRREGULAR DIET	NIL	ABSENT	ABSENT	NO
49	22064536	M	49 YRS	PRESENT	PRESENT	PRESENT	NORMAL DIET	DIABETIC	PRESENT	PRESENT	NO
50	22067768	M	57 YRS	PRESENT	ABSENT	PRESENT	NORMAL DIET	NIL	ABSENT	PRESENT	NO