

TONGUE COATING IN PATIENTS WITH GASTRO-INTESTINAL AND LIVER DISEASES

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SUMMARY:

It is known that coating on the tongue can be expressed differently – from thin milk diaper, to thick dirty brown blanket, often associated with malodor in the mouth. Some diseases are suspected for causing increased coating of the tongue.

The purpose of this study was to investigate and compare the degree of coating of the tongue in patients with gastrointestinal diseases and healthy ones.

Key words: tongue coating, liver disease, gastrointestinal disease.

INTRODUCTION

Tongue coating comprises bacteria, large amount of desquamated epithelial cells released from the oral mucosa, leukocytes from periodontal pockets, blood metabolites and different nutrients. It is a fact that the elderly patients are more likely to exhibit a coated tongue than the younger patients (2). Change in dietary habits, poor oral-hygiene, decrease of salivary flow, drugs often increase coating on the tongue (2).

Coating on the tongue can be expressed differently – from thin milk diaper, to thick dirty brown blanket, often associated with malodor from the mouth. Some diseases are suspected for causing increased levels of tongue coating (3, 5, 9).

We paid an attention on the coating of the tongue knowing the sentence that the tongue is a mirror of the body and its physiological role as the first part of the gastrointestinal tract. We investigated if there is dependence between tongue coating and health.

AIM

Our aim was to investigate and compare the degree of coating of the tongue in patients with gastrointestinal and chronic liver diseases and healthy subjects.

MATERIAL AND METHODS:

56 patients with gastrointestinal diseases (31 patients with gastritis, gastric ulcers and gastroduodenitis, 25 with chronic hepatitis B and C and cirrhosis), were included in the study. Patients were recruited from the Clinic of Gastroenterology of “St Ivan Rilski” Hospital, Medical University, Sofia.

71 disease-free subjects represented our control group. They were without: pharyngitis and tonsillitis, sever periodontal abscesses, oral lesions, radiotherapy and / or chemotherapy, microbiological infections and antibiotic treatment at least 1 month before the survey, with no history and clinical data of chronic diseases, including pregnancy and mental illness

For the presence of tongue coating we used Kojima index (Table. 1), which assessed once visually and secondly by color photography every person.

Tabl. 1. Kojima score for tongue coating

Index of Kojima (1985):	
0	no coating (visual)
1	a thin coating of less than one third of the back of the tongue
2	a thin coating of less than two thirds of the tongue or less than 1 / 3 covered with a thick coating
3	more than two thirds covered with a thin tongue coating or less than 2/3 covered with a thick tongue coating
4	more than two thirds of the tongue is covered with a thick coating

RESULTS AND DISCUSSION

Different medical conditions affect the tongue (febrile conditions, dehydration, chronic renal failure, diabetes, gastric and duodenal ulcer, enterocolitis, chronic nephritis, leukemia, glossitis, etc.) (3, 8, 9). There is a few data in the medical literature about the oral and tongue manifestations concerning our selected group of patients (7, 11, 12).

V. V. Afanas'ev et coworkers (2008), mentioned that 50 patients with active hepatitis had different oral signs - such as candida infections and lingua geographica (1). Other authors published similar data in children with gastrointestinal disease. The authors summarize most common oral manifestations – changes on the lips and tongue and gingivitis (R. Z. Urazova, 2001). W. Deng et coworkers studied normal tongue manifestation in patients with primary liver cancer (4). C. Li, in 2003 searched relationship between tongue picture and cell apoptosis in patients with chronic gastritis (7).

We preferred to evaluate the tongue coating by Kodjima index system (6), because we have an information not only for the presence of coating on the tongue, but about its thickness also. This is often neglected feature in other tongue coating systems (10).

Our results (Table. 2) indicate that most frequently: I - first degree of coating score had patients with liver diseases;

II - second degree had patients with gastrointestinal diseases;

III –third degree more often has been seen in the control group;

IV - Most often the fourth degree of coating had patients with bowel disease-about 5 times more frequently than controls and about twice more frequently than hepatic patients.

Tabl. 2. Tongue coating score in patients with liver and gastrointestinal disease

Index	Control group	Gastrointestinal diseases	Diseases of the liver
0	23,7%	20,8%	23,8%
1	36,8%	25%	47,6%
2	10,5%	25%	4,8%
3	26,3%	16,7%	19,0 %
4	2,6%	12,5%	4,8 %

In the group of patients with gastrointestinal diseases patients with index 1 (corresponding to a thin coating of less than one third of the back of the tongue) and index 2 (a thin coating of less than two thirds of the tongue) were in equal proportion (25%) (Table 2).

In the group with liver disease the data from Lingual Index by Kodjima differed from those with gastrointestinal diseases. There prevailed patients with index 1, followed by those with index 3 (where more than two thirds of the tongue surface was coated with a thin coating or less than two thirds covered with a thick tongue coating).

Index 4 represented 12.5% in this group.

We didn't observe visible coating of tongue in about 20% of controls and patients.

For comparison – in patients with replaced renal function 50% of investigated persons had a II - second degree of lingual index (3) and 10% had completely covered dorsal lingual surface (corresponding to index 4). (3).

CONCLUSION:

We observed the presence of a thick coating corresponding to the fourth degree of Kodjima Index in five times more patients with gastrointestinal diseases and about twice more patients with liver diseases compared with healthy subjects. This parameter can easily and quickly orient us to the presence of gastrointestinal disease.

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