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CLINICAL EVALUATION OF GINGIVO-PERIODONTAL SYMPTOMS IN EPSTEIN-BARR VIRAL INFECTION

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ABSTRACT

Introduction Mononucleosis is an infectious disease caused by Epstein-Barr virus (EBV) and characterized clinically by fever, angina, adenosplenomegalie, haematological by leucocytosis with atypical mononucleosis and immunologic by appearance of specific and nonspecific antibody. **The purpose of the study** This clinical and statistical evaluation study aimed total gingivo-periodontal manifestations due to infectious mononucleosis generally correlated with clinical, laboratory examination results and general demographic characteristics. **Material and methods** We took a group study consisting of 95 people hospitalized with the diagnosis of infectious mononucleosis in which we evaluated the clinical aspects of muco-gingival lesions in correlation with oral lesions and the emergence stage of the infectious mononucleosis. **Results** Most cases 20.6% of the total study group showed at intraoral clinical examination haemorrhagic pickets, diffuse gingival erythema and a smaller percentage had gingivo-necrotic acute ulcerative stomatitis. **Conclusions** Acute human infection, transmission, usually benign, occurring more frequently in younger age (children and adolescents), infectious mononucleosis is characterized by clinical polymorphism, diagnostic difficulties, possible complications as well as the existence of possible relationships with other oral pathological entities (aggressive periodontitis) or systemic (Hodgkin disease), characters emphasizes the need for numerous clinical biological research on this disease.

Key words: Epstein-Barr virus, gingivo-periodontal manifestations, clinical polymorphism.

INTRODUCTION

Infectious mononucleosis is an infectious disease determined by Epstein–Barr virus (EBV) clinically characterized by fever, angina, adenosplenomegaly, from haematological point of view by leucocytosis with atypical mononucleosis, and from immunological point of view by formation of the specific and non-specific antibodies.

Primary infection with Epstein-Barr virus in childhood remains clinically hidden, but can offer solid immunity [1, 2, 3].

The transmission of the disease is made by direct or very close contact, by air or kissing (normally the disease is more frequent between 20 and 25 years old).

More and more studies suggest that some viruses may have a role in the pathogenesis of periodontitis, DNA of herpes viruses such as Epstein-Barr virus (EBV) was detected in high percentages in subgingival plaque of patients with periodontitis, unlike the very low prevalence of these viruses to the healthy periodontal patients. Moreover herpes viruses have been associated with severity and activity of periodontitis and also with the

presence of periodontopathic bacteria [4, 5, 6].

Epstein-Barr virus is one of the most spread viruses, getting infected almost 90% of people and persisting in the body their entire life [7, 8].

Infectious mononucleosis is an infectious disease determined by Epstein –Barr virus (EBV) clinically characterized by fever, angina, adenosplenomegaly, from haematological point of view by leucocytosis with atypical mononucleosis, and from immunological point of view by formation of the specific and non-specific antibodies. [9]

Clinic and cellular evolution of infectious mononucleosis is similar with the one of lympho-proliferation, with a particular aspect determined by the autolimitation of the process extension, followed by spontaneous healing.

Establishing a clinical diagnosis involves knowledge about the disease manifestations by doctors of all the specialities that patients with this disease can address to; the exactity of the ethyological diagnosis depends on the timing of the virus and blood lab exams [10].

It was scientifically demonstrated that EBV virus is still present in the blood many months after the healing of infectious mononucleosis. So, it is recommended that these patients to be excluded from blood or organs donation for 6 months after the disease initial symptoms [11, 12].

AIM OF THE STUDY

This clinic and statistic study had as a purpose the evaluation of oral manifestations caused by infectious mononucleosis in correlation with systemic symptoms, lab results and general demographic features.

For reaching our aim we followed a few specific objectives:

- describing the oral pathology caused by infectious mononucleosis from the perspectives of demographic variables;
- correlation of oral pathology caused by infectious mononucleosis with systemic clinic manifestations;
- correlation of oral pathology caused by infectious mononucleosis with the results of lab exams.

MATHERIAL AND METHOD

We choose for the study group 95 patients with infectious mononucleosis from Clinical Hospital of Infectious Diseases of Iasi during january 2009 – august 2011 (colab. PhD dr. Erica Rudnic). From the total number of 95 patients of our study group, 49 were mail and 46 were female.

At each case of infectious mononucleosis we took into consideration:

- demographic general variables: age, sex, social environment;
- family and personal medical history;
  - initial symptoms and evolution;
  - clinical aspects of cutaneous lesions;
  - clinical aspects of mucosal and gingival lesions:

1. correlation between the appearance of the oral lesions and the evolution stage of the infectious mononucleosis;
2. correlation between the lab exam results and modality of appearance and evolution of oral symptomatology in infectious mononucleosis;
   - paraclinic aspects (lab included) concerning viruses and bacteria;
   - disease evolution.

RESULTS

From the entire study group with infectious mononucleosis, 43 patients (45,3%) did not present lesions of the oral mucosal membrane as a clinical symptom of this disease – Table 1, Figure 1.

The rest of 52 cases (54,7%) presented oral manifestations determined by infectious mononucleosis.

Oral symptoms of the patients infected

with Epstein-Barr virus presented various forms of manifestations.

Most of the cases (19 cases – 20 % of total number of the study group) presented at clinical intraoral exam a haemorrhagic patch, a feature characteristic to this disease accordingly to literature data.

A number of 15 cases (15, 8%) presented a diffuse erythema on oral mucosal membrane, which represents a clinical manifestation cited in the literature as being associated with infectious mononucleosis.

Interesting is the fact that we noticed at a relative increased number of cases (9 cases – 9,5% of total number of study group) multiple manifestations at oral mucosal membrane level ; from these manifestation the most important was ulcero-necrotic gingivo-stomatitis, which can be associated with the immune-compromised host because of the prolonged period of evolution of the infectious mononucleosis – Table 1.

Characteristics of the oral manifestations	*Absolute frequency*	*Procentual frequency*	*Sum of procentual frequency*
Number of cases without	43	45.3	45.3
Haemorrhagic patch	19	20.0	65.3
Diffuse mucosal erythema	15	15.8	81.1
Whitish purulent deposits (pseudo membranes)	2	2.1	83.2
Haemorrhagic patch + diffuse mucosal erythema	7	7.4	90.5
Haemorrhagic patch + ulcero-necrotic gingivitis + diffuse mucosal erythema	9	9.5	100.0
Total	95	100.0	

Table I. Eruptive manifestations on the oral mucous membrane

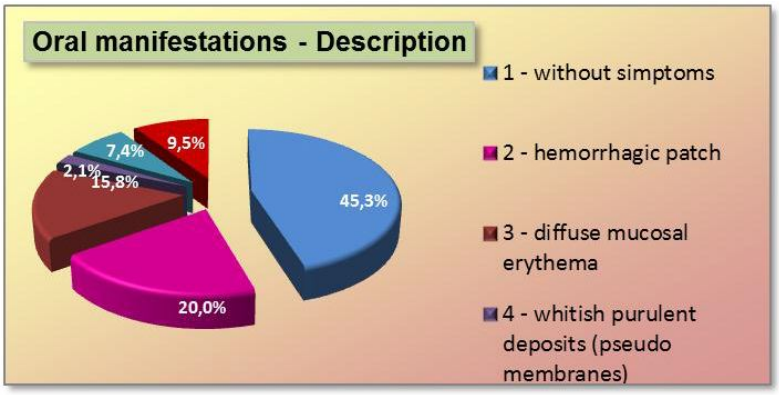

Fig. 1. Manifestations of the oral mucous membrane - *description*

Localization of the eruptive manifestations at the oral mucous membrane level

The most frequent type of lesions associated with infectious mononucleosis were localized on the mucous membrane of soft palate and on the fibromucousa of the hard palate (for 18 cases – 18,9% of the entire study group infected with EBV) – Table 2.

For a relative increased number of cases, oral lesions (so called red lesions of the mucous membrane) presented gingival localization (with similar manifestation as diffuse erythema in 11 cases – 11,6% of the entire study group) – Table 2.

In isolated cases we noticed lesion with atypical localization:

- In 2 cases (2, 1%), the mucous eruption was localized on the soft palate and extended for pharynx (in this case representing the main cause of the pharynx

erythema);
- In another 2 cases (2, 1%) oral manifestations appeared in the area of jugal and gingival mucous membrane ;
- In only one case we noticed based on clinical exam, an extended localization of lesions on the oral mucous membrane (on hard and soft mucous membrane, gingival and jugal mucous membrane) – Fig.2.

Oral manifestation - localization	*Absolute frequency*	*Procentual frequency*	*Sum of procentual frequency*
Number of cases without	43	45.3	45.3
jugal mucous membrane	2	2.1	47.4
gingival mucous membrane	11	11.6	58.9
lips	1	1.1	60.0
palatal arch and soft palate	18	18.9	78.9
soft palate+ pharynx	2	2.1	81.1
jugal mucous membrane + gums	2	2.1	83.2
gums+ palatal arch + soft palate	3	3.2	86.3
jugal mucous membrane + palatal arch + soft palate	1	1.1	87.4
jugal mucous membrane + gums + palatal arch + soft palate	12	12.6	100.0
Total	95	100.0	

Table 2. Localization of eruptive manifestation on oral mucous membrane

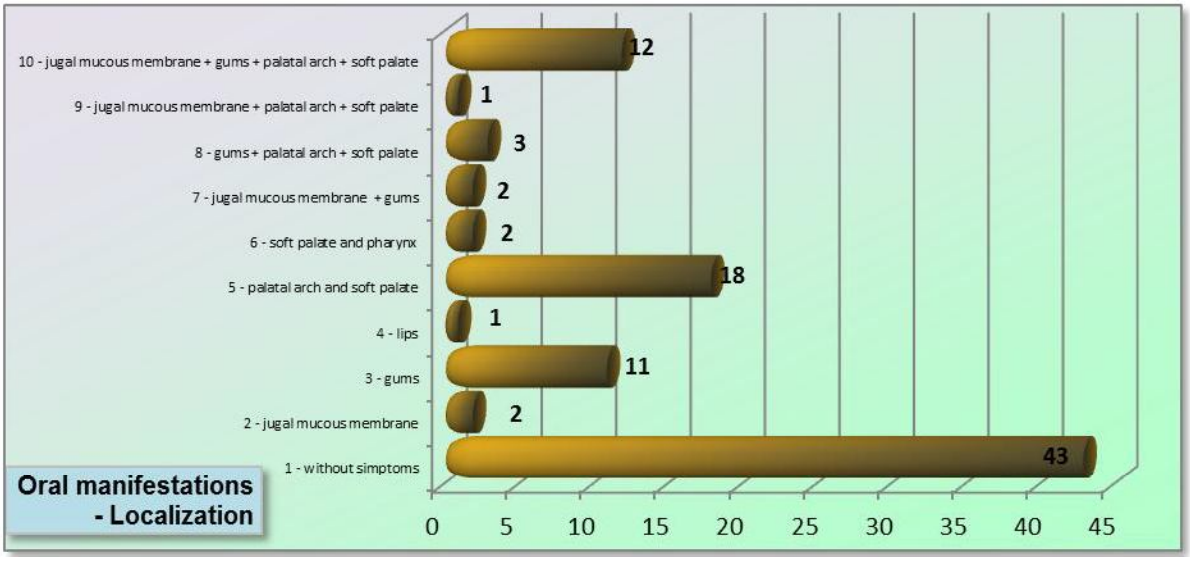

Fig. 2. Manifestations of the oral mucous membrane – localization

Type of eruptive lesions situated on the oral mucous membrane and their localization

Infectious mononucleosis is an acute human infection, transmissible, in general benign, affecting in general young patients (children and teenagers), characterised by: fever, angina, adenosplenomegaly, from haematological point of view by leucocytosis with atypical mononucleosis, and from serological point of view by formation of heterophilic antibodies.

Gate entrance of the virus being into oral cavity, as well as the most of the clinical manifestations, is the dentist duty to identify the Epstein-Barr viral infection and to prevent

its spreading into the population.

CONCLUSION

Ethiology, clinical polymorphism, diagnosis problems, complications that might appear and the existence of a possible connection with Hodgkin disease, determined numerous clinic and biological studies about this disease.

Practical interest increased for this disease associated with many still controversial aspects, made us approach this subject which has a great importance for dentistry.

If the dentist has a patient with an Epstein-Barr virus infection, he/she needs to postpone the dental treatment and to send the patient to Infectious Disease Clinic.

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