INTRODUCTION

Temporomandibular Disorders (TMD) represent a heterogeneous group of pathologies affecting the temporomandibular joint, the massatory muscles, or both, characterized by a classical triad of clinical signs: muscle pain and/or temporomandibular joint (TMJ) pain; TMJ sounds; and restriction, deviation, or deflection of the mouth opening pattern. TMD are considered the most common orofacial pain condition of non-dental origin, even though the reported prevalence differs among investigators. The actual prevalence of TMD at population level is matter of debate, due to the lack of homogeneity in the diagnostic criteria adopted by the various research groups. Moreover, it is a common belief that the age distribution of TMD patients is characterized by a Gaussian curve, with a peak of prevalence between the 35 and 45 years and a decrease in younger and older people.

The aim of the study is to evaluate the prevalence of different RDC/TMD (Research Diagnostic Criteria for Temporomandibular Disorders) diagnoses in a population of patients seeking TMD care at a tertiary clinic in Northern Italy and to evaluate the pattern of age distribution of RDC/TMD diagnoses.

METHODS

Data of the present study were collected from 243 consecutive patients seeking TMD care at the TMD Clinic, Department of Maxillofacial Surgery, University of Padova, during a period of six months. History taking and clinical examination were conducted, according to the standard, internationally accepted Italian version of the RDC/TMD instrument. Clinical assessment was performed by two trained investigators (D.M. and L.G.N.). Exclusion criteria were age <18 and presence of polyarthrits and other systemic rheumatic conditions. This study reports prevalence data of RDC/TMD axis I diagnoses, without considering the assessment of the psychological status of TMD patients as provided by the RDC/TMD axis II. Patients were given one or more of the following diagnoses: muscle disorders (group I), disc displacement (group II), and arthralgia, osteoarthrosis, and osteoarthroarthrosis (group III) (Table 1).  

The RDC/TMD classification system allows multiple diagnoses. Different diagnoses within each group are mutually exclusive, but it is possible to have a minimum of 0, i.e., absence of any positive group I, II, and III diagnoses, to a maximum of 5 diagnoses, i.e., a group I diagnosis of muscle disorders plus a group II and a group III diagnoses for each joint. The prevalence of the different RDC/TMD axis I diagnoses and all the descriptive statistics were calculated with the software SPSS 15.0 for Windows (SPSS, Chicago, IL, USA).

RESULTS

RDC/TMD axis I diagnoses

The hundred and ninety-nine (N = 199) patients satisfied inclusion criteria: 166 (83.4%) females and 33 (16.6%) males (M/F = 5:1). Mean age of the patients was 39.7±17.1 years (range 18–80). The distribution of single and combined RDC/TMD axis I diagnoses is shown in Table 2: the majority of patients (64.3%) received RDC/TMD diagnoses of more than one group.

Age distribution of TMD diagnoses

In order to ascertain the age-related pattern of diagnoses distribution, the sample was divided in 4 groups on the basis of percentile-derived intervals within the variable “age”. Group A consisted of patients aged <25 (n=47). Group B age between 25 and 37 (n=51). Group C age between 38 and 51 (n=45). Group D age >52 years (n=56). The age distribution of RDC/TMD diagnoses in the three groups is reported in Figure 1.

Mean age comparison of different RDC/TMD diagnoses

The age distribution for the overall sample is illustrated in Figure 2. On the basis of the age distribution of RDC/TMD diagnoses, two main distinct groups of TMD patients could be identified. A first group (Figure 3) was represented by patients showing disc displacement in the absence of degenerative disorders, i.e., a group II diagnoses alone or combined with group diagnoses of muscle disorders and/or group IIIa diagnosis of arthrosis (n=107, mean age of 32.7±4.5, males 18.7%, females 81.3%). A second group was represented by patients with signs and symptoms of inflammatory-degenerative joint disorders, i.e. group IIIb diagnosis of osteoarthrosis and/or group IIIc diagnosis of osteoarthrosis or osteoarthroarthrosis (n=46, mean age of 54.2±15.1, males, 8.7%; females, 91.3%).

DISCUSSION

In the present investigation, demographic features of the study population (mean age approx. 40 years; M:F=5:1 and the prevalence of group I, II and III diagnoses were consistent with those of similar studies in the literature(5,10,11,12). However, taken together, data on the prevalence of RDC/TMD axis I diagnoses in this study population present some peculiar differences. In particular, the distribution of diagnoses pointed out the very high percentage of patients with inflammatory-degenerative joint disorders, alone or combined with other diagnoses, and the very low percentage of patients with muscle disorders alone (4.5%). Another interesting issue is the distribution pattern of diagnoses in the different age groups. The youngest age groups, A and B, were characterized by a higher prevalence of disc displacement disorders, while the oldest groups, C and D, by a marked predominance of group III diagnoses. From this consideration it is possible to identify two distinct clusters of patients, accounting for almost 80% of the study population. The first cluster (n=107) of patients with a mean age of 32.7 years and with diagnosis of disc displacement, with or without arthralgia and a second cluster (n=46) of patients with a mean age of 54.2 years with diagnosis of osteoarthrosis/osteoaarthrosis. The identification of such distinct profiles of TMD subjects within a population of patients, despite being possibly obvious at a first glance, has never been described in the literature, and is worthy to be discussed in the light of common beliefs that TMD have a peak within the 35–45 years age range.

CONCLUSIONS

The present investigation showed evidence of some interesting features related to a population of patients seeking TMD care at a specialized university clinic in Northern Italy. In particular the prevalence of inflammatory-degenerative disorders seems to be higher than previously reported in other similar investigations. Multiple diagnoses seem to be a frequent clinical reality in line with literature data. Muscle disorders, especially if diagnosed alone, seem to be less prevalent than previously reported. Finally, it is possible to identify two distinct age peaks within this population of patients seeking TMD care, one at the other for more than 20 years: one about at 30–35 years for patients with disc displacement, alone or in combination with myofacial pain and/or arthrosis, and a second one at 50–55 years for patients with arthrosis/arthroarthrosis of the TMJ. Thus, common statements that TMD have a peak around the age of 40 seem to be valid only as general statements for TMD populations as a whole, and more studies regarding the epidemiologic features of any RDC/TMD diagnoses are needed. Obviously, these findings have to be confirmed by means of multicenter studies involving many calibrated investigators before generalization.