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AGE PEAKS OF DIFFERENT RDC/TMD DIAGNOSES IN A PATIENT POPULATION.

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INTRODUCTION

Temporomandibular Disorders (TMD) represent a heterogeneous group of pathologies affecting the temporomandibular joint, the masticatory muscles, or both[1], characterized by a classical triad of clinical signs: muscle and/or temporomandibular joint (TMJ) pain; TMJ sounds; and restriction, deviation, or deflection of the mouth opening pattern[2].

TMD are considered the most common orofacial pain condition of non-dental origin, even though the reported prevalence differs among investigators[3]. 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 [4]. 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[5].

The aim of the study is to evaluate the prevalence of different RDC/TMD [6] (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[7]. Clinical assessment was performed by two trained investigators (D.M. and L.G.N.). Exclusion crieria were age <18 and presence of polyarthritis 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 group diagnoses: muscle disorders (group I), disc displacement (group II), and arthralgia, osteoarthritis and osteoarthrosis (group III). (Table 1).

GROUP I muscle disorders	I a Myofascial pain
	I b Myofascial pain with limited opening
GROUP II disc displacements	II a Disc displacement with reduction
	II b Disc displacement without reduction with limited opening
	II c Disc displacement without reduction without limited opening
GROUP III arthralgia, osteoarthritis, osteoarthrosis	III a Arthralgia
	III b Osteoarthritis of the TMJ
	III c Osteoarthrosis of the TMJ

Table 1: Different groups of diagnosis according to RDC/TMD

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
One-hundred-ninety-nine (N = 199) patients satisfied inclusion criteria; 166 (83.4%) females and 33 males (16.6%)(F:M = 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 diagnosis is shown in Table 2: the majority of patients (64.3%) received RDC/TMD diagnoses of more than one group.

RCD/TMD group	Patients (n)	Prevalence (%)
I	9	4.5
II	24	12.1
III	38	19.1
I+II	4	2.0
I+III	38	19.1
II+III	43	21.6
I+II+III	43	21.6

Table 2: Distribution of RDC/TMD diagnoses in the study population.

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.
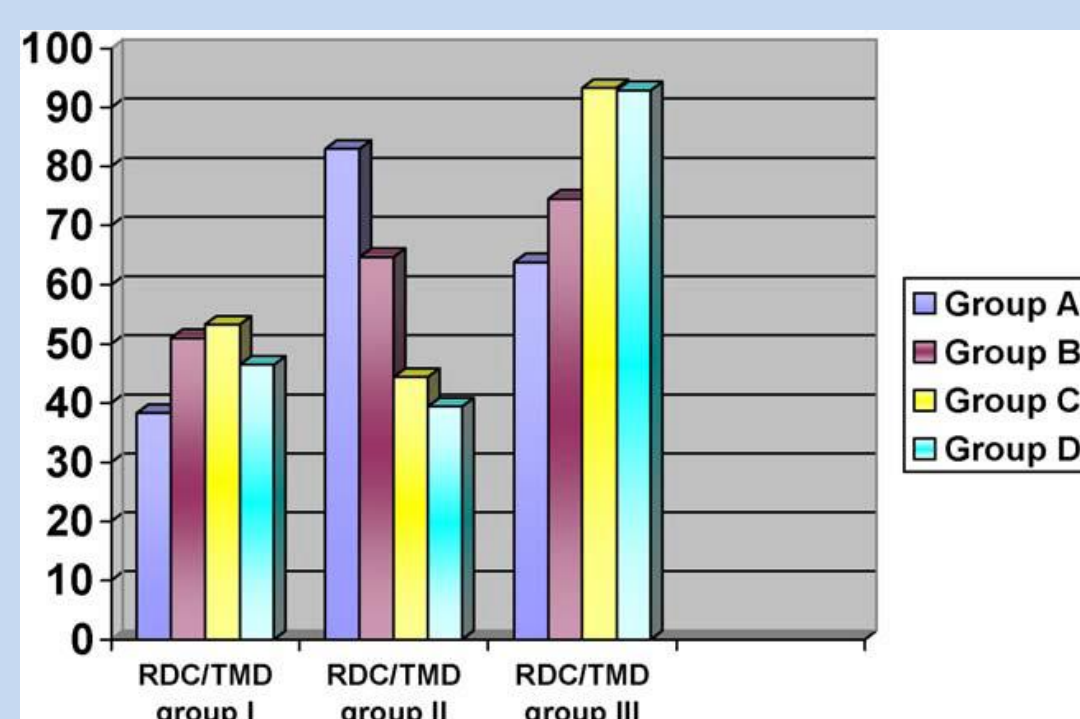
Figure 1: Age distribution of RDC/TMJ diagnoses
(Legend: group A: <25 years; group B: 25≤age ≤38; group C: 38 ≤age ≤52; group D: ≥52 years)

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. any group II diagnoses alone or combined with group I diagnoses of muscle disorders and/or group IIIa diagnosis of arthralgia (n=107, mean age of 32.7±14.5, 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 osteoarthritis and/or group IIIc diagnosis of osteoarthrosis (n=46, mean age of 54.2±15.1 4 males, 8.7%; 42 females, 91.3%).
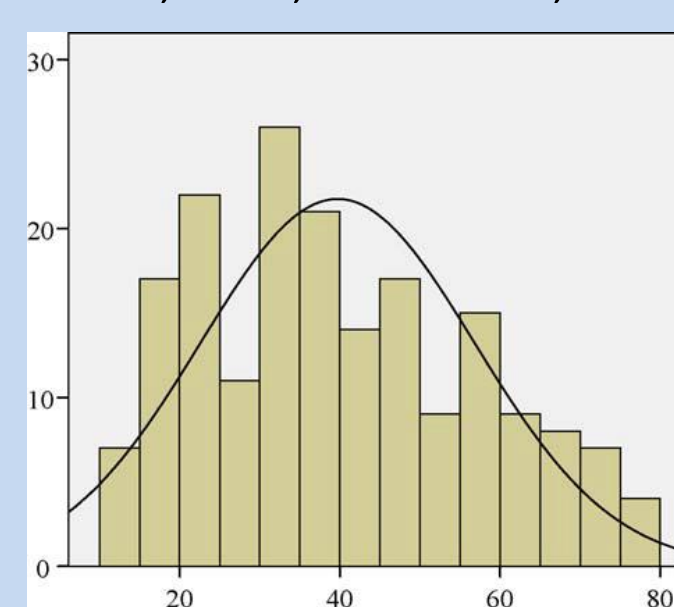
Figure 2: Age distribution of patients in the overall sample (N=199). (X-axis=age; Y-axis=no. of patients)
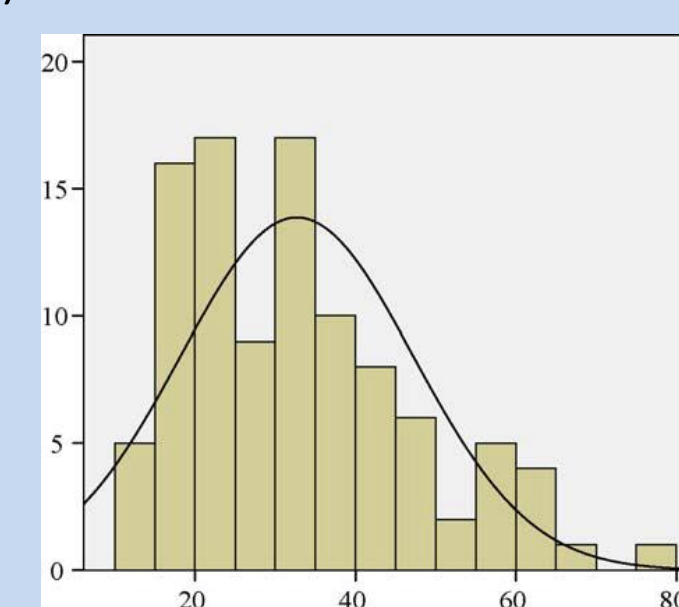
Figure 3: Age distribution in patients with RDC/TMD diagnosis of disc displacement with or without arthralgia (N=107). (X-axis=age; Y-axis=no. of patients)
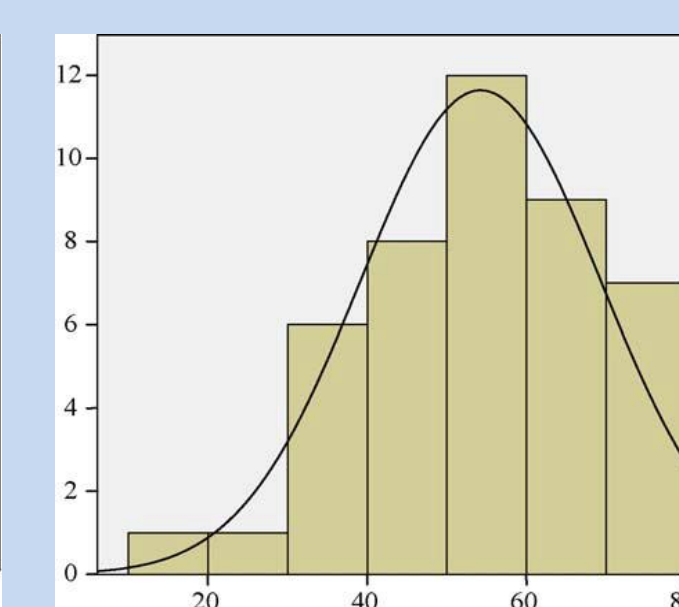
Figure 4: Age distribution in patients with RDC/TMD diagnosis of arthritis and/or arthrosis (N=46). (X-axis=age; Y-axis=no. of patients)

A comparison of the distribution of patients according to their age of the two main cluster of TMD patients with respect to the overall sample is illustrated in Figure 5.
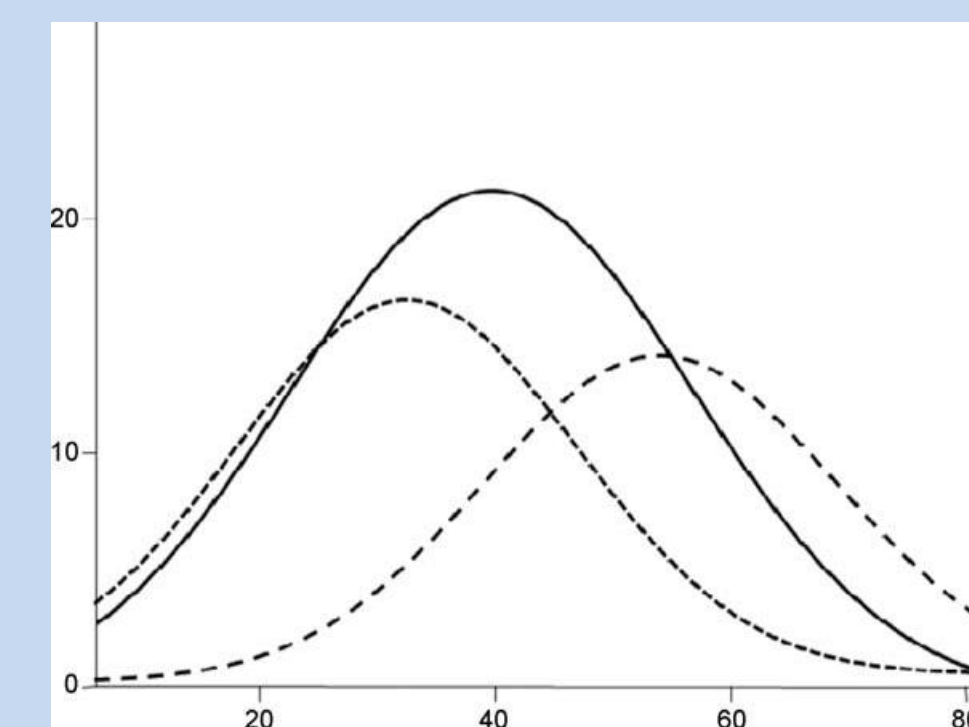
Figure 5: Comparison of the three distribution of patients according to their age.
(Legend: continued line--overall sample, 39.71 years; dotted line-- disc displacement with or without arthralgia, 32.69 years; interrupted line--arthritis and/or arthrosis, 54.52 years. (X-axis=age; Y-axis=no. of patients)

DISCUSSION

In the present investigation, demographic features of the study population (mean age approx. 40 years; F:M 5:1) and the prevalence of group I, group II and group III disorders were consistent with those of similar studies in the literature[8,9,10,11,12]. 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 an higher prevalence of disc displacement diagnoses, 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: a 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 osteoarthritis/osteoarthrosis. 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 for TMD care, distant one to the other for more than 20 year: one about at 30–35 years for patients with disc displacement, alone or in combination with myofascial pain and/or arthralgia, and a second one about at 50–55 years for patients with arthritis/arthrosis 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.

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