



UNIVERSIDADE ESTADUAL DE CAMPINAS
FACULDADE DE ODONTOLOGIA DE PIRACICABA

GABRIEL PIRES PASTORE

**Análise da severidade da disfunção
temporomandibular relacionada ao tratamento
empregado e a automedicação**

**Analysis of temporomandibular dysfunction severity
related to treatment and self medicine intake**

PIRACICABA

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ao tratamento empregado e a automedicação**

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Tese apresentada à Faculdade de Odontologia de Piracicaba, da Universidade Estadual de Campinas como parte dos requisitos exigidos para a obtenção do Título de Doutor em Clínica Odontológica – Área de Concentração em Cirurgia e Traumatologia Buco-Maxilo-Faciais.

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Orientador: Prof. Dr. Márcio de Moraes

Este exemplar corresponde à versão final da tese defendida pelo aluno Gabriel Pires Pastore e orientada pelo Prof. Dr. Márcio de Moraes

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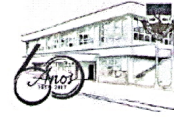
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A Ata da defesa com as respectivas assinaturas dos membros encontra-se no processo de vida acadêmica do aluno.

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RESUMO

O objetivo deste trabalho foi observar três diferentes aspectos relacionados a disfunção temporomandibular (DTM): o uso da automedicação, a correlação entre os instrumentos de avaliação da DTM, e os resultados funcionais com o uso da artroscopia. Foram realizados três estudos independentes: No primeiro estudo, foram selecionados prospectivamente 34 pacientes que responderam ao Índice Anamnésico de Fonseca (IAF) e a um questionário contendo questões relativas ao primeiro profissional procurado e ao uso de automedicação. No segundo estudo, foram incluídos 38 prontuários de pacientes. Foram utilizados os dados dos instrumentos de avaliação: IAF; Questionário dos Sintomas Mandibulares e Hábitos Orais (QSMHO), índice de Helkimo (IH) e o questionário de triagem para dor orofacial e distúrbios temporomandibulares recomendado pela Academia Americana de Dor (AAOPQ). No terceiro estudo, foi realizada uma revisão de 42 prontuários de pacientes que foram submetidos a artroscopia das articulações temporomandibular [operatória (AO) ou lise e lavagem (ALL)]. Os dados referentes à presença de dor e abertura interincisal máxima foram registrados para os períodos de acompanhamento de um mês e dois meses. Os dados foram analisados utilizando o programa SPSS versão 18.0. Em todos os estudos foi observada a prevalência do gênero feminino (91,2%; 84,6%; 85,7%), com idade média próxima a metade da quarta década de vida. No primeiro estudo, 17 pacientes relataram ter utilizado medicação por conta própria, principalmente analgésicos, mais especificamente a dipirona sódica. O cirurgião dentista foi o profissional mais procurado (55,5%). Não foi observada a associação entre a automedicação e a severidade da DTM utilizando o IAF. No segundo estudo, os pacientes classificados como DTM severa no IAF apresentaram mais respostas positivas no AAOPQ, com diferença estatisticamente significativa quando comparados aos pacientes com DTM leve ($p < 0.01$). Foi observada uma correlação positiva ($r = 0,78$; $p < 0.01$) entre o número de respostas positivas no AAOPQ e o somatório dos escores do QSMHO. Os pacientes classificados como DTM severa no IAF apresentaram maiores escores no QSMHO, com diferença estatisticamente significativa quando comparados aos pacientes com DTM moderada ($p < 0.01$) e DTM leve ($p < 0.01$). No terceiro estudo, 17 de pacientes foram submetidos a AO e 25 a ALL. Não foi observada diferença estatisticamente significativa quanto a melhora da abertura bucal máxima em relação aos

procedimentos (AO=2.24 mm; ALL=1,92 mm). Em ambos os tratamentos, a abertura bucal pré-operatória foi menor que a pós-operatória de um e dois meses. Dois pacientes tratados com ALL permaneceram com dor depois de dois meses. A partir destes estudos é possível concluir que: a automedicação parece ter alta prevalência nos pacientes com DTM, porém esta prática parece não alterar a severidade da doença e o tempo até a consulta inicial; parece haver uma congruência entre resultados dos instrumentos de avaliação para DTM utilizados, de forma que a escolha deve ser baseada nos objetivos clínicos ou de pesquisa; A artroscopia representou melhora da dor nos pacientes refratários ao tratamento conservador, porém com pouco ganho de abertura bucal máxima independentemente da técnica utilizada (AO e ALL).

Palavras-chave: Articulação Temporomandibular. Artroscopia. Automedicação. Dor. Transtornos da Articulação Temporomandibular.

ABSTRACT

The purpose of this study was to observe three different aspects related to temporomandibular disorders (TMD): The use of self-medication, the correlation between the instruments for assessing the TMD, and functional outcomes with the use of arthroscopy. In the first study, we prospectively selected 34 patients who responded to Fonseca Anamnestic Index (FAI) and a questionnaire containing questions regarding the sought professional and the use of self-medication. In the second study, 38 medical records of patients were included. The data used were from follow evaluation tools: FAI; Jaw Symptom & Oral Habit Questionnaire (JSOHQ), Helkimo index (HI) and American Association of Orofacial Pain Questionnaire (AAOPQ). In the third study, a review of 42 medical records of patients that underwent arthroscopy of the temporomandibular joint [operative (OA) or lysis and lavage (ALL)] was performed. The presence of pain and maximum interincisal opening were recorded for the follow-up periods of one month and two months. Data were analyzed using SPSS version 18.0. The prevalence of females were identified in all studies (91.2%; 84.6%; 85.7%) and an average age of half of the fourth decade of life. In the first study, 17 patients reported self-medication habit, especially painkillers, more specifically dipyrone. The dentist was the most sought professional (55.5%). There was no association between self-medication and the severity of TMD using the FAI. In the second study, patients classified having a severe TMD in FAI had more positive responses in AAOPQ, with a statistically significant difference when compared to mild TMD patients ($p < 0.01$). A positive correlation was identified between the number of positive responses in AAOPQ and the sum of JSOHQ scores ($p < 0.01$ $r = 0.78$). Patients classified having a severe TMD in FAI had higher scores in JSOHQ, with a statistically significant difference when compared to patients with moderate TMD ($p < 0.01$) and mild TMD ($p < 0.01$). In the third study, 17 patients underwent to ALL and 25 to OA. There was no statistically significant difference in the improvement of maximal mouth opening regarding the arthroscopic procedure performed (OA = 2.24 mm; ALL = 1.92 mm). For both treatments, the preoperative maximal mouth opening is smaller than the postoperative in the one and two months of follow-up. Two patients that received ALL remained with pain after two months of follow-up. From the studies carried, it is

possible conclude that: self-medication seems to have a high prevalence in patients with TMD, however this practice does not seem to change the severity of the disease at initial consultation; there was a congruence between the results of the assessment instruments used for DTM, then the choice should be based on the clinic and research purposes; Arthroscopy appears to alleviate the pain of patients unresponsive to conservative treatment, however the improvement of maximum mouth opening was small regardless of the technique used (AO and ALL).

Keywords: Temporomandibular Joint. Arthroscopy. Self Medication. Pain. Temporomandibular Joint Disorders.

RESUMEN

El objetivo de este trabajo fue observar tres diferentes aspectos relacionados a los trastornos temporomandibulares (TTM): El uso de automedicación, La correlación entre los instrumentos para evaluar El TTM, y los resultados funcionales con el uso de la artroscopia. Se realizaron tres estudios independientes: En el primer estudio fueron seleccionados de forma prospectiva 34 pacientes que respondieron al Índice Anamnésico de Fonseca (IAF) y un cuestionario que contiene preguntas con respecto al primer profesional buscado y el uso de la automedicación.

En el segundo estudio fueron incluidos 38 registros de pacientes . Se utilizaron los datos de las herramientas de evaluación: la (IAF); Cuestionario de Síntomas de la mandíbula y los hábitos orales índice (QSMHO) Helkimo (HI) y el cuestionario de selección para el dolor orofacial y trastornos temporomandibulares recomendado por la American Academy of Pain (AAOPQ).

En el tercer estudio, fue hecha una revisión de 42 registros de pacientes sometidos a Artroscopia de la articulación temporomandibular [operativo (AO) o de lisis y de lavado (ALL)]. Se registraron los datos relativos a la presencia de dolor y máxima apertura interincisal para periodos de un mes y dos meses de control . Los datos se analizaron con el programa SPSS versión 18.0. En todos los estudios se observó una prevalencia de las mujeres (91,2%; 84,6%; 85,7%) y un promedio de edad de la cuarta década de la vida. En el primer estudio, 17 pacientes informaron tener medicamento que utilizan por su cuenta, especialmente analgésicos, específicamente dipirona. El dentista fue el profesional más buscado (55,5%). No hubo asociación entre la automedicación y la gravedad de TTM usando el IAF.

En el segundo estudio, los pacientes clasificados como TMD severo en IAF mostraron respuestas positivas en más AAOPQ, con una diferencia estadísticamente significativa en comparación a los pacientes con TTD leve ($p < 0,01$). Entre el número de respuestas positivas en AAOPQ QSMHO y la suma de las puntuaciones, una correlación positiva ($p < 0,01$ $r = 0,78$) se observó. Los pacientes clasificados como se TTM severo en IAF tenían las puntuaciones más altas en QSMHO, con una diferencia estadísticamente significativa en comparación con los pacientes con TMD moderado ($p < 0,01$) y la TTM ($p < 0,01$). En el tercer estudio, 17 pacientes fueron sometidos a AO y 25 a ALL. No hubo diferencia estadísticamente significativa en la mejora de la apertura oral máxima para los procedimientos de (AO = 2,24 mm; ALL = 1,92 mm). En ambos tratamientos, la apertura oral preoperatoria es más pequeña que el postoperatorio de un mes y dos meses. Dos pacientes tratados con LLA se mantuvieron con dolor después de dos meses.

A partir de estos estudios se puede concluir que: la automedicación parece tener una alta frecuencia en pacientes con TTM, pero no parece que esta práctica cambia la gravedad de la enfermedad y el tiempo hasta la consulta inicial; parece que hay una congruencia entre los resultados de los instrumentos de evaluación utilizados para el DTM, de ese modo la elección debe basarse en los objetivos clínicos o en la investigación clínica ; La artroscopia representó mejora del dolor en pacientes refractarios al tratamiento conservador, pero con algo de ganancia de apertura máxima de la boca sea una o otra técnica utilizada (AO Y LLA).

Palavras clave: Articulación Temporomandibular. Artroscopia. Automedicación. Dolor. Transtornos da Articulación Temporomandibular

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LISTA DE ABREVIATURAS E SIGLAS

AAOPQ - American Association of Orofacial Pain Questionnaire

ALL- arthroscopy for lysis and lavage of the temporomandibular joint

ATM - Articulação temporomandibular

DTM - Disfunção temporomandibular

FAI - Fonseca Anamnestic Index

HI - Helkimo index

JSOHQ - Jaw Symptom & Oral Habit Questionnaire

MIO - Maximal interincisal opening

OA – Operative arthroscopy of the temporomandibular joint

NSAID - Nonsteroidal anti-inflammatory drugs

RDC/TMD - Research Diagnostic Criteria for Temporomandibular Disorders

RNM - Ressonância nuclear magnética

TMD - Temporomandibular disorder

TMJ – Temporomandibular joint

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1. INTRODUÇÃO

A Disfunção Temporomandibular (DTM) é considerada um conjunto de condições que afetam tanto a articulação temporomandibular quanto os músculos da mastigação podendo haver degeneração da articulação devido ao seu mau funcionamento (Ilha Filho, et al., 2004). Apesar do estudo da articulação temporomandibular (ATM) e suas disfunções serem principalmente tratada pela área da odontologia, este tema deve ser interdisciplinar, uma vez que relaciona-se a outras áreas da saúde como a ortopedia, fisioterapia, fonoaudiologia, psicologia, terapia ocupacional e farmacologia (Machado et al., 2014).

O diagnóstico e o tratamento precoce da DTM oferecem melhor prognóstico ao paciente, que resultam em melhora do quadro de dor, da função mandibular e de toda a condição sistêmica do paciente, visto que as disfunções temporomandibulares podem afetar a postura e são associadas com o equilíbrio do corpo inteiro (Walczyńska-Dragon et al., 2014). O diagnóstico deve ser baseado na história clínica, exame físico e de imagem. O exame físico deve incluir a palpação dos músculos da mastigação e da ATM, análise da oclusão e observação da abertura e fechamento bucal.

A tomografia computadorizada tem sido utilizada como método de avaliação do tecido ósseo relacionado a ATM, pois este é capaz de gerar imagens sem sobreposição com espessura de corte fino, adquirindo um papel importante no diagnóstico de anomalias da ATM (dos Santos Silveira et al., 2014). No entanto, o diagnóstico e o tratamento dos desarranjos internos da ATM foi melhorado pela introdução da ressonância nuclear magnética (RNM) em 1985, este método se tornou o padrão ouro para observação de alterações dos tecidos moles envolvidos na ATM (Laskin, 2007).

A etiologia da DTM é considerada multifatorial, pois envolve fatores de origem anatômica, oclusal, muscular, psicológica e recentemente tem-se atribuído aos hormônios

sexuais o papel de fator contribuinte para o surgimento de disfunção (LeResche, et al., 1997). As DTMs geralmente apresentam sinais e sintomas como dor, restrição da abertura bucal e movimentos mandibulares, ruídos articulares entre outros (Camacho, et al., 2014). Ilha Filho et al. (2004), relataram que os sons da ATM como o estalido são indicativos da falta de sincronismo entre o côndilo da mandíbula e disco articular, podendo acarretar alterações degenerativas. As crepitações são indicativos de atrito entre as fibrocartilagens, ocorrendo devido às superfícies estarem irregulares, e têm sido consideradas como representantes da doença avançada. A crepitação pode indicar perfuração do disco articular ou inserção, especialmente se existem imagens compatíveis com processo degenerativo articular (Ilha Filho, et al., 2004).

A dor que tem como origem a DTM está geralmente relacionada a inflamação e sinovite. A prevalência, intensidade e duração da dor têm sido associadas a diferenças na concentração de estrógeno. Não existe um consenso de qual o papel do estrógeno na modulação da dor, se existe uma relação direta com níveis elevados, níveis baixos ou na mudança rápida na concentração (LeResche et al., 2003).

Para tratar efetivamente as DTMs deve ser realizado o diagnóstico preciso da causa e local da alteração, sendo este classicamente dividido em desordens articulares e não-articulares (Liu e Steinkeler, 2013). A disfunção articular pode ser inflamatória ou não. Quando inflamatória pode estar associada a quadros de doenças reumáticas, como artrite reumatóide e psoríase. Doença articular não inflamatória inclui osteoartrite, desordens do disco articular ou osso, como deslocamento anterior do disco articular com ou sem redução. Estas desordens são geralmente classificadas segundo os estágios proposto por Wilkes 1989 (Wilkes, 1989) (Estágios de I a IV), baseada em achados clínicos, anatômicos e radiográficos, que foram posteriormente completados com os achados de artroscopia por Bronstein & Merrill 1992 (Bronstein e Merrill, 1992).

No estágio inicial I de Wilkes geralmente não há dor, pode haver clique persistente em abertura, o disco está posicionado anteriormente com boca fechada. No estágio II, Inicial-intermediário, há episódios de dor, clique audível em abertura com recaptura ou travamentos, o disco está posicionado anteriormente com pequena deformação da parte posterior que está espessada pode ser evidente sinovite e pequenas adesões. No estágio intermediário (III) são observados muitos episódios de dor, travamento com boca fechada, limitação dos movimentos mandibulares. O disco articular está posicionado anteriormente com deformação, sinovite avançada e adesões marcadas, condromalácia grau I e II. No estágio IV, intermediário-tardio, ocorre a intensificação dos sintomas, com alterações ósseas como achatamento da eminência articular e alterações do côndilo. Na artroscopia pode ser observado um quadro mais severo que o anterior, com condromalácia III e IV. O estágio tardio V é caracterizado por crepitação, dor intensa e limitação funcional. É observada perfuração do disco, deformidades em tecido ósseo evidentes na tomografia computadorizada, adesões e osteófitos. Na artroscopia é observada fibrilação, hialinização, sinovite avançada, perfuração retrodiscal, condromalácia IV (Bronstein e Merrill, 1992; Wilkes, 1989).

Existem diversas modalidades de tratamento para as DTMs, estas são divididas em três grupos: tratamento não cirúrgico ou conservador, tratamento minimamente invasivo (artroscopia e artrocentese) e cirurgia aberta da ATM. O tratamento não cirúrgico das DTMs geralmente implica na explicação dos fatores envolvidos na doença, dieta leve, exercícios de movimento mandibular por meio da fisioterapia e terapia com placas oclusais. Quando o tratamento não cirúrgico não for bem sucedido, as intervenções cirúrgicas, tais como os procedimentos minimamente invasivos ou cirurgias abertas de ATM podem ser considerados (Vos et al., 2013).

Quanto a utilização de placas oclusais, nenhuma demonstrou ser superior as demais, talvez a simples utilização de uma placa em silicone na arcada inferior forneça bons resultados (Sidebottom, 2009). A experiência demonstra que a adequada condução de terapias conservadoras como a utilização de placas oclusais, fisioterapia, toxina botulínica, eletroestimulação de alta voltagem e manipulação profunda da musculatura, podem levar os pacientes a melhoras significativas dos sinais e sintomas da DTM.

Quanto a utilização da fisioterapia, na maior parte dos estudos não há um detalhamento quando a frequência, duração e exercícios utilizados. A utilização desta está condicionada a presença de sintomatologia e a observação de melhora progressiva do quadro clínico. Este método não é prejudicial e é reversível, no entanto, não existem evidências científica suficientes de que esta é benéfica a longo prazo. A fisioterapia pode ser utilizada para tratamento de curto prazo e principalmente na melhora da restrição da abertura bucal após tratamento cirúrgico (Sidebottom, 2009).

Quanto aos procedimentos minimamente invasivos, o primeiro a ser proposto foi a artroscopia utilizada primeiramente para lavar os espaços articulares. Resultados positivos com esta técnica impulsionaram a realização de um procedimento simplificado denominado artrocentese (Murakami et al., 1987). No passado, a artrocentese foi utilizada principalmente para tratar pacientes com episódios agudos de deslocamento do disco articular sem redução (*Closed lock*). Atualmente, esta tem sido utilizada para vários problemas de ATM, tais como deslocamento de disco com redução e tratamento paliativo de episódios agudos de artrite reumatóide e alteração degenerativas da ATM. Diversas modificações das técnicas para lise de adesão e lavagem da ATM têm sido relatadas. A injeção de fluido sob pressão parece ser um método eficaz para tratar as aderências que são responsáveis pela restrição do movimento condilar de translação (Tozoglu et al., 2011).

Os desarranjos internos da ATM, como o *closed lock*, tem sido tratados de modo eficaz utilizando os procedimentos minimamente invasivos. A artrocentese é menos invasiva do que a artroscopia, parece ser o tratamento ideal para casos recentes de *closed lock* (González-García, 2015).

A artroscopia da ATM foi primeiramente descrita por Ohnishi (1975). Na década de 80 diversos autores descreveram técnicas, que associado ao entendimento das alterações internas da ATM e ao desenvolvimento tecnológico contribuíram para a consolidação e otimização da artroscopia da ATM (Silva et al., 2015). A literatura contém diversos estudos que relatam o papel desta terapia na melhora funcional e da dor nos pacientes com distúrbios intra-articulares (Israel, 1999; Murakami, 2013; González-García, 2015; Al-Moraissi, 2015). A partir do objetivo inicial, que era de lise e lavagem a artroscopia evoluiu em tecnologia e técnica cirúrgica devido ao trabalho de diversos autores (McCain e Hossameldin, 2011). Esta passou a ser uma importante ferramenta de diagnóstico, que permite a visualização direta dos tecidos intra-articulares e a realização de biópsia, tornando o processo de diagnóstico mais preciso. Além disso, é possível por meio da triangulação e instrumentação remover aderências, reposicionar e suturar o disco articular, injetar medicação no espaço articular superior de forma precisa (Israel, 1999). Além disso, este procedimento tem sido associado a baixos índices de complicações (Hoffman e Puig, 2015).

A artroscopia também melhorou o conhecimento sobre as patologias da ATM. Inicialmente, um modelo de pesquisa que combinou a visualização direta dos tecidos patológicos e a análise bioquímica do líquido sinovial ajudou na mudança de conceitos sobre a patogênese e o tratamento das DTMs (Israel, 1999).

O reposicionamento do disco articular por meio de cirurgia artroscópica ainda é controverso. A taxa de sucesso parece ser similar a artroscopia para lise e lavagem, porém a

documentação e os exames de imagem do pós-operatório são insuficientes para que sejam estabelecidas conclusões definitivas (González-García, 2015). Devido à escassez de estudos que demonstrem a permanência do disco na posição estabelecida pós intervenção acompanhado de resultados funcionais a longo prazo, além disso, não há um consenso quanto a real capacidade da ressonância magnética em determinar perfurações pré-operatória no disco articular. O procedimento de reposicionamento do disco articular não pode ser considerado de rotina, mas o cirurgião hábil pode, eventualmente, realizar o procedimento quando necessário (Murakami, 2013). São necessárias pesquisas com um maior nível de evidencia científica para orientar clínicos e pacientes em relação as opções terapêuticas cirúrgicas para o tratamento dos desarranjos internos da ATM (Gonçalves, et al., 2015). Desta maneira é importante entender que o treinamento contínuo e num grupo com experiência comprovada, é essencial para obtermos resultados que realmente indiquem a validade desta ou qualquer técnica cirúrgica. Isto é importante, as expensas de levar o tratamento ao patamar de técnica falida, caso o profissional não ser realmente treinado.

Quando ocorre a falha do tratamento para DTM utilizando a artroscopia, parece haver uma preferência da maioria dos cirurgiões em realizarem um procedimento cirúrgico diferente, no entanto, uma segunda artroscopia pode ser benéfica. Alguns fatores devem ser considerados: o período de tempo decorrido desde o primeiro tratamento e se o paciente apresentou qualquer alívio dos sinais e sintomas após a realização do primeiro procedimento (Vega et al., 2011). Sendo a artroscopia um procedimento menos invasivo, mesmo em pacientes com resultados refratários a médio prazo, faz sentido continuar com a mesma terapia cirúrgica e desta maneira, não impor um tratamento radical.

A cirurgia aberta da ATM, quando indicada, deve ser considerada como um procedimento adjuvante ao plano de tratamento global (Israel, 1999). Este é um

procedimento cirúrgico invasivo e irreversível, enquanto a cirurgia artroscópica é modalidade cirúrgica menos invasiva e pode ser repetida. Em algumas situações a intervenção cirúrgica minimamente invasiva realizada precocemente pode evitar a realização da cirurgia aberta de ATM (Murakami, 2013).

A artroplastia consiste em remodelar a ATM, remover osteófitos, o disco pode ser reposicionado, reparado ou removido. Nesta é realizada um acesso cirúrgico, geralmente o pré-auricular. O sucesso deste tratamento segue alguns critérios como: abertura bucal maior que 35 mm, ausência ou dor leve, habilidade de tolerar uma dieta normal e estabilização radiográfica das alterações degenerativas.

Outra modalidade mais invasiva é a substituição total da ATM, utilizada apenas em estágios muito avançados da doença. Pode ser utilizado enxerto costo-condral ou articulações aloplásticas customizadas ou de estoque. As indicações destas incluem anquilose de ATM e falha do enxerto autógeno (Liu e Steinkeler, 2013).

O tratamento cirúrgico deve ser empregado com critérios uma vez que a probabilidade de melhora na função mandibular e no controle da dor diminui com o aumento do número de procedimentos cirúrgicos (Vega, et al., 2011). Existem uma série de fatores que podemos aprender observando as experiências passadas. Com o avanço nos métodos de aquisição e interpretação de imagens, ocorreu uma melhora significativa na capacidade de diagnóstico das DTMs, no entanto é importante que os resultados dos exames complementarem sejam correlacionados com os sinais e sintomas clínicos. Dessa forma, o tratamento deve ser direcionado aos pacientes e não as imagens de radiografias ou de ressonância magnética. Fazer o contrário, resulta na realização de cirurgias desnecessárias (Laskin, 2007).

Apesar dos avanços, os clínicos ainda encontram alguma dificuldade em tratar com sucesso muitos dos pacientes com DTMs, e encontrar as soluções para estes problemas

dependerá de desenvolvimentos futuros (Laskin, 2007). A presença de quadros clínicos diversos e de muitas modalidades terapêuticas dificultam o processo de padronização dos tipos de desordens tratadas e resultados obtidos com os tratamentos. Diversos instrumentos foram propostos para identificação de pacientes afetados/ saudáveis, dos sinais e sintoma, para o diagnóstico e para a classificação da severidade da doença (Dworkin e LeResche, 1992; Chaves et al., 2008).

Apesar da literatura ser extensa não há uniformidade nos protocolos de tratamento e resultados a longo prazo. O objetivo deste estudo é observar três diferentes aspectos relacionados a disfunção temporomandibular:

- 1- O comportamento dos pacientes frente aos sinais e sintomas;
- 2- A avaliação da severidade dos sintomas e a correlação desta entre os instrumentos de avaliação;
- 3- A avaliação do tratamento minimamente invasivo em relação aos resultados funcionais.

2. ARTIGOS

Assessment of the Prevalence of Self-medication among Patients with Temporomandibular Disorder: A preliminary study

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Abstract

Objective: The aim of the present study was to determine the prevalence of self-medication among patients with temporomandibular disorder, and to analyze correlations with the severity of the disease. **Methods:** A prospective study was conducted with patients who had been diagnosed with Temporomandibular disorder (TMD). The patients were submitted to anamnesis and a physical examination. This research also used the Fonseca Anamnestic Index (FAI) and a questionnaire that was developed specifically for this study, containing questions related to the first health professional contacted and self-medication. The data were analyzed using comparative and correlative analysis (Version 18.0 of SPSS software), with the level of significance set at $p < 0.05$. **Results:** Thirty-four patients were included, with a prevalence of females (91.2%) and a mean age of 39.76 years. Half of the patients claimed to have chosen their own medications at time, especially analgesics. Sodium dipyrone was used by 15 of the participants. Dentists were the most commonly contacted health professionals (55.5%). No correlation was found between self-medication and the severity of TMD according to the FAI. Furthermore, the time period between the onset of symptoms and the first consultation was not affected by self-medication. **Conclusion:** Self-medication seems to be highly prevalent among patients with TMD, although this practice does not seem to alter the severity of the disease or the time period between the onset of symptoms and the initial consultation.

Keywords: Pain; Temporomandibular disorder; Self-medication.

Introduction

In most societies, a person who is suffering from physical and/or emotional discomfort has several options available to them. One of these options is self-medication, which can be defined as the use of medicines to treat disorders (self-diagnosed) or symptoms. One of the greatest problems with this practice is the absence of a clinical assessment by a qualified health professional, which can lead to delays in the diagnosis and adequate treatment, health risks, the inadequate use of medication, interaction with other prescribed medications and unnecessary spending.¹

The use of medication (whether prescribed or not) has become more common as a form of therapy to reduce morbidity and improve the quality of life of many individuals. A part of this group are patients who suffer from conditions that generate chronic pain. It is believed that 12 % of these people are affected by temporomandibular disorder (TMD) and 5% of this group exhibit severe symptoms that require treatment.²

TMD is a term that is applied to functional abnormalities related to the temporomandibular joint (TMJ) and associated masticatory structures. The etiology of TMD is multifactorial, including trauma, malocclusion, parafunctional habits, muscular abnormalities, emotional stress, anxiety, postural abnormalities and rheumatic conditions.⁽³⁾ The treatment of this disorder is based on a precise diagnosis of the location of the abnormality, which are usually divided into joint and non-joint disorders.⁴

A conservative or surgical treatment plan is established for each diagnosis. The literature contains therapeutic approaches involving medication, occlusal appliance, physiotherapy, acupuncture, open surgery on the TMJ and arthroscopy, among others.⁴ The most common forms of medication for this condition are analgesics, anti-inflammatories and muscle relaxants.⁵

Afolabi et al. (2010)¹ conducted a study in an attempt to determine the proportion of patients who seek dental services and self-medicate. In total, 536 patients were interviewed and of these, 42% admitted using medication without a prescription. The medication they selected was usually used in isolation (56.4%). They favored the use of analgesics (50.1%) and antibiotics (30.4%), for at least one week (45.8%). The general perception was that the use of these drugs would save them time and money (22.2%).

Patients with TMD exhibit symptoms such as headache and tinnitus, which lead them to seek professional help from neurologists, otolaryngologists and physiotherapists. A number of patients receive their first treatment when the TMD is already severe, due to the delay in seeking specialized help. No previous studies were identified with the specific aim of assessing the prevalence of self-medication among patients with TMD, although some have dealt with this subject.^{6,7} The aim of the present study was to identify the prevalence of self-medication among patients with temporomandibular disorder and to correlate this self-medication with the severity of the symptoms and the time period that elapsed before the initial consultation.

Methods

A prospective study was conducted with patients complaining of pain and TMD in a dental clinic in the Universidade Paulista (São Paulo, Brazil). The following inclusion criteria were applied: patients who appeared at the institution for the first time; male and female individuals; aged between 18 and 80 years; with a minimum classification of mild TMD according to the FAI.⁸ The following exclusion criteria were applied: patients with chronic systemic diseases and generalized pain, including fibromyalgia and rheumatoid arthritis; patients who did not exhibit clinical signs and symptoms of TMD and patients who had undergone a previous surgical procedure on the TMJ.

All of the patients were evaluated by the same researcher. The Fonseca Anamnestic Index (FAI) was used to assess the severity of the TMD.⁸ The FAI was developed in Brazilian Portuguese to assess the severity of TMD, based on signs and symptoms. The index is made up of ten items with three response options: “yes” (10 points), “sometimes” (5 points) and “no” (0 points). The score is determined by the sum of the points of all items and is classified as follows: absence of signs and symptoms of TMD (0-15 points); mild TMD (25-45 points); moderate TMD (50-65 points) and severe TMD (70-100 points). The English version of this questionnaire was reported by Campos et al. (2009)⁹ and is displayed in Chart 1.

Chart 1 – Questions in the English language version of the Fonseca anamnestic Index according to Campos et al. (2009)⁹.

1. Do you have difficulty opening your mouth wide?
2. Do you have difficulty moving your jaw to the sides?
3. Do you feel fatigue or muscle pain when you chew?
4. Do you have frequent headaches?
5. Do you have neck pain or a stiff neck?
6. Do you have ear aches or pain in that area (TMJ)?
7. Have you ever noticed any noise in your TMJ while chewing or opening your mouth?
8. Do you have any habits such as clenching or grinding your teeth?
9. Do you feel that your teeth do not come together well?
10. Do you consider yourself a tense (nervous) person?

A questionnaire developed specifically for this research was also used. It contained questions related to the onset of symptoms, the first contact with a health professional and self-medication (Chart 2).

Chart 2 – Questionnaire to assess the prevalence of self-medication among patients with temporomandibular disorder

1. What is your main complaint, the reason for your appointment?
2. How long after your symptoms began did you seek professional help?
3. Who was the first person who contacted for help?
 - Dentist
 - Physiotherapist
 - Speech Therapist
 - Doctor – general clinic
 - Doctor – Otolaryngologist
 - Doctor – Neurologist
 - Doctor – Other specialty: _____
 - Other: _____
4. Have you taken any medication based on your own decision (without a prescription) before seeking this help?
 - YES, which medicine?
 - NO
5. When you took the medication you self-prescribed, did you ask anybody for help and if so, who?
 - Pharmacist
 - Clerk
 - Friend/ Neighbor
 - Relative
 - Other _____
6. Are you currently taking any medication?
 - YES
 - For what?
 - Was it prescribed by a professional? YES NO

The data were analyzed using descriptive and correlational statistics, with the support of SPSS software (v. 18.0) for Windows (SPSS Inc, Chicago, IL). The Chi-square test was used to assess the relationship between the variables, with the level of significance set at $P < 0.05$. The present study was approved by the Research Ethics Committee of the Faculty of Dentistry of the UNIP.

Results

The present study assessed 34 patients, with a prevalence of women (91.2%), a mean age of 39.76 ± 14.86 and a mean BMI of 23.77 ± 4.59 . Most of the patients had completed high school (44.1%), followed by third level education (38.2%) and primary education (17.6%). Six categories were identified for the main pain complaint: pain in the TMJ (32.4%); headaches (29.4%); difficulty while chewing (11.8%); clicking and crackling noises in the TMJ (11.8%); bruxism and teeth clenching (11.8%); and tinnitus (2.9%). Table 1 shows distribution of sample according to variables studied.

Table 1 – Distribution of patients according to variables: self-medication, gender, education level, age and time to seek professional help

Self-medication		Education level (n*)			Mean age (years)	Mean time (months)**
		Primary school	Hight School	University		
Yes	Female	4	6	6	39.53	19.32
	Male	0	1	0		
No	Female	2	7	6	40	27.29
	Male	0	1	1		

** Number of patients

* The time period that elapsed between the onset of the symptoms and the first consultation.

Concerning the first health professional contacted after the onset of symptoms, a prevalence was recorded for dentists (55.9%), followed by otolaryngologists (23.5%), general doctors (17.6%) and neurologists (2.9%). The time period that elapsed between the onset of the symptoms and the first consultation ranged from 15 days to 4 years, with a mean value of 13.29 ± 14.88 months. Half of the patients (n=17) claimed to have self-medicated prior to seeking professional help. Most of this group used analgesics (n=15), particularly dipyrone (n=12) and paracetamol (n=3), although the use of non-steroidal anti-inflammatories (n=5) and muscle relaxants (n=1) was also reported. Most of the patients used medication without an indication from another person (n=14), although two patients based their medication on the

recommendations of a pharmacist and another asked a family member. In the sample, 15 patients exhibited systemic diseases. In total, 61.8% of the patients currently take medication and of these, 90.5% of the drugs were prescribed by a health professional. Six patients in the sample claimed to suffer from, or had been diagnosed with, depression.

No statistical difference was recorded between self-medication and the level of education ($\chi^2=0.810$; $p=0.667$) or gender ($\chi^2=0.366$; $p=0.545$). A correlation was found between the main complaint and the health professional contacted. A dentist was most often contacted for complaints related to chewing difficulties, noises in the TMJ and parafunction. For pain in the TMJ however, the distribution was similar among dentists ($n=6$) and otolaryngologists ($n=4$). A significant proportion of patients contacted a general practitioner for headaches ($n=5$; 50%), when compared to the other complaints.

When using the Fonseca anamnestic index, the sample exhibited an even distribution among the levels of severity: mild ($n=10$); moderate ($n=14$); and severe ($n=10$). No statistically significant differences were found between the presence of severe TMD and self-medication ($\chi^2=0.56$; $p=0.452$). The mean time period that had elapsed between the onset of symptoms and the initial consultation was longer among patients with severe TMD (17.13 months) than among those with moderate TMD (9.63 months) or mild TMD (14.75 months), although there were no statistically significant differences between the groups (Kruskal-Wallis, $\chi^2= 2,23$; $p=0.327$). No correlation was found between the time period that had elapsed between the onset of symptoms and the first consultation and self-medication (11.76 months) or prescribed medication (14.93 months) ($U=119.5$; $p=0.984$).

Discussion

Self-medication has been reported as an option people choose to relieve the suffering of conditions that cause pain. TMD can cause severe pain and affect the daily life of an individual, particularly while speaking and chewing. Thus, it is no surprise that these patients report to self-medication at times. However, the percentage of the population with TMD that self-medicate and how this behavior affects the severity of their condition in the first consultation remain unclear. The present study confirmed a high prevalence of self-medication, without any evidence that this behavior affects the severity of the condition.

Self-medication has social influence, access to medication directly on the shelves and overt marketing campaigns contribute to this type of behavior. Brazil is one of the world's painkillers consumer markets.¹⁰ Chagas et al. (2015) evaluated the use of analgesics of 145 patients with headache diagnosed in Outpatient Headache Clinic. They found that 34% of patients performed self-medication.¹¹ Regarding analgesic used, Compounds with Dipyron (32%) and Dipyron (23%) were the most frequently used. These results contribute to results found in our study, that most of patients reported self-medication used analgesics, particularly dipyron (n=12). There is some concern about this medication as a risk factor for agranulocytosis and aplastic anemia, although the evidence for possible serious side effects from dipyron use is weak. The Brazilian Public Health Surveillance System, based on the evidence available up to the present, concluded that the sale of dipyron as an over-the-counter medication in Brazil could continue.¹²

Eaves (2015)⁷ conducted a semi-structures qualitative interview with 44 patients with TMD. The purpose of this study was to show how individual with chronic pain describe their use of over-the counter (OTC) pain medication and analyze OTC pain medication advertising. Drug marketing trend to perpetuate ideals of normality and deservingness and offers the

idioms of self-responsibility, self-care, and responsible citizenship they seek. In this study, it was possible to observe a large time interval between the onset of symptoms and the demand for professionals, the use of self-medication and alleviation of symptoms due to easy access to medications can contribute for this situation. However, the seeking for a professional could be related to some factors such as pain intensity, pain acceptance, worsen of symptoms, fear of invasive treatments, treatment costs, lack of trained professional and treatment costs.

Servidoni et al. (2006)¹³ assessed self-medication among ear, nose and throat patients. Questionnaires from 72 patients (mean age of 38 years) were assessed and the majority of the patients self-medicated (83%), although in 72% of these cases, they asked the clerk or pharmacist for advice. The most common types of drugs used were analgesics and antipyretics (90%), followed by flu medicine (78%) and anti-inflammatories (69%)(9) The lower prevalence of self-medication found in the our study (50%) may have been affected by the sociocultural profile of the participants and the society in which they live. The most significant variables in these studies are the access to health services, access to information and the level of education of the participants.

It is notable that most of the patients who self-medicate have completed a third level course and do not require any help to choose the medication they use, probably due to their greater access to information. The questionnaire could be expanded to obtain data about how they search for information about the disease, as well as signs and symptoms and the therapeutic options available for the condition, on internet sites, social networks and in specialized magazines.

Different prevalence rates for TMD have been reported depending on the population studied. The gold standard for the diagnosis of TMD should be based on an assessment of the patient's history as well as a clinical examination.¹⁴ Several instruments have been created to

assess TMD. The most commonly used tool is the RDC/TMD, which combines a clinical assessment and the medical history of the patient.¹⁵ However, other instruments have been cited and used to assess the frequency of signs and symptoms, as well as the severity of TMD. The Fonseca Anamnestic Index (FAI) has been proposed as a low cost and easy-to-apply alternative. In Brazil, the FAI has frequently been used to classify the severity of an individual's TMD (mild, moderate, severe and no TMD).^{9,16-18} The FAI questionnaire contains 10 items that are answered by the patient. For large-scale initial epidemiological studies, the FAI is extremely advantageous as it is quick-to-apply and cost-effective.

Campos et al. (2014)¹⁶ conducted a study to assess the validity and reliability of the FAI with 700 women. The authors reported that questions 4, 8 and 10 did not contribute to the internal consistency of the instrument. These questions do not assess structural-anatomical abnormalities related to the function of the TMJ, unlike the other questions. Berni et al. (2015) assessed the capacity of the FAI to identify female patients with myofascial pain, when compared with patients without myofascial TMD. The authors assessed 203 women and confirmed that the range between 50-100 points could be used to diagnose this condition, with high rates of sensitivity (86.3%) and specificity (91.90%). The FAI was used in the present study due to its capacity to classify the severity of TMD.

In the present study, the main pain complaint recorded was headache, followed by pain when opening the mouth and noises in the TMJ. TMD symptoms and headache are extremely common, the precise relationship between these two conditions is not known. A daily headache that occurs on awakening is often a symptom related to nocturnal bruxism. Many patients do not have understanding about the disease and do not know the dentist as a professional of primary choice for pain in the face, head and neck. Thus, others health professionals usually were seeking, as showed in this study that 44.5% of patients sought

other health professionals. This reflects the need to publicize the dentist as a qualified professional to diagnosis and treat myofascial and temporomandibular joint disorders. When the headache was not due to TMD, it is important to referral the patients to a neurologic evaluation to rule out other potential pathologic conditions.¹⁹

Zulqarnain et al. (1998)²⁰ conducted a study to identify the symptoms correlated with TMD among female students. They analyzed the questionnaires of 705 students, with a mean age of 21.3 years. The authors confirmed the prevalence of fatigued jaws (34.5%), discomfort while chewing (31.3%), pain in the preauricular region (22.4%) and pain during maximal mouth opening (22.4%). Approximately 27.3% claimed to take medication, whether prescribed by a health professional or not. These authors presented an overview to an educational level, thus was not possible replicate these results for the population as a whole. In our study no statistical difference was found between self-medication and the level of education ($\chi^2=0.810$; $p=0.667$). This result could be related to the limited sample size, or by the fact that although there are different educational attainment, the knowledge about this disease is not available in an appropriate manner or people do not have access to this.

Some symptoms that affect patients with TMD are unspecific and contribute to the variety of health professionals dealing with this condition. Regarding otorrinolaringologista, two main factors that contribute to confusion between otologic pathology and TMD are the anatomic proximity and sensory innervation via auriculotemporal nerve. Patients often cannot differentiate ear pain from TMJ pain.¹⁹ The challenge of each clinician is to be able to make an accurate diagnosis and referral the patient to the most appropriate specialist as a part of the multidisciplinary approach for TMD.

The prevalence of females was noted in the present study, which was expected as TMD is more commonly reported among women. In the sample studied, no correlation was

found between the severity of the disease (FAI) and the use of oral contraceptives. Kostrzewa-Janicka et al. (2013)²¹ found that women who took contraceptives for less than three months exhibited a risk of failures during conservative treatment for TMD. This risk was 2.67 fold greater than for women who didn't take this type of medication or had used it for more than three years. The differences in the estrogen levels of women with a normal cycle and those who use contraceptives are responsible for the differences found in the results. In the former group, the intensification of pain occurs in the peri-menstrual period when the levels of estrogen exhibit greater variation, whereas for the latter, the pain persists throughout all of the cycle, although this mechanism has not been completely elucidated.

Wang et al. (2008)²² highlighted three aspects to analyze the effect of estrogen on the incidence of TMD. The first (epidemiological) is related to the peak incidence after puberty among women, particularly those of reproductive age. The second aspect refers to the biological role of estrogen in the structures of the TMJ. The authors highlighted the presence of estrogen receptors in the synovial membrane, articular disc and condyle. Estrogen seems to decrease the differentiation of osteoblasts by diminishing cellular proliferation and the differentiation of the extracellular matrix. Estrogen seems to also affect the metabolism of the cartilage, with a decrease in the synthesis of proteoglycans, associated with erosion. The third aspect refers to the pain mechanism. Estrogen can affect the expression of many types of neuropeptides in the sensory nerves. Another mechanism involves the interaction between estrogen and the neuropeptide nitric oxide, which originates in the endothelium and has been correlated with inflammation and the central processing of pain.

The use of anti-inflammatories and analgesics is by no means contraindicated for patients suffering from pain caused by TMD. However, the use of these drugs should be based on clinical criteria, respecting the dosage, interval of administration and time of use that are

recommended by a health professional. There are a wide variety of drugs that have been used for pain relief and these could vary according to the country where the study was conducted. Elder et al. (2012) in a study with 111 participants with TMD identified that 21 participants used opioids, 90 reported using NSAID, mainly ibuprofen, acetaminophen, naproxen and aspirin.⁶ These drugs have been incorporated into the dynamic of a consumer society, and as such, are subject to market interests that can be contrary to their main objective (prevention, diagnosis and treatment of illnesses).¹³ Therefore, it is important to determine the profile of patients and the type of medication used in order to prepare educational campaigns on this issue. More research is needed to determine how commonly people with chronic pain are self-medicating as well as seeking care in alternative settings.⁷

This was a preliminary study as it only involved one research center and a limited number of subjects. However, the aim of this research was to present a topic that should be explored using two easy-to-use and fast questionnaires. The limitations of the present study includes the small size and heterogeneity of the sample and the absence of the patient's clinical data.

Conclusion

The idea of self-medicating before seeking professional help seems to be a common attitude among patients with TMD. However, for the sample studied and according to the Fonseca anamnestic index, this behavior was not correlated with the severity of the symptoms. The prevalence of self-medication seems to not be related to the time elapsed between onset of symptoms and first consultation with a professional.

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Assessment of Instruments used to Classify Patients with Temporomandibular Disorder

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Abstract

Purpose: The aim of the present study was to identify the relationship between instruments used to screen and diagnose temporomandibular disorders (TMD). **Methods:** A retrospective study was conducted between July 2015 and January of 2016 using medical records of patients with temporomandibular disorder, who had attended the institution for an initial assessment between January and December of 2014. Medical history and physical examination data, particularly those that focused on the diagnosis of TMD and TMJ (temporomandibular joint) function, were collected. The following instruments were used to assess the severity of the signs and symptoms of TMD: the Fonseca Anamnestic index (FAI); the Helkimo index (HI); the American Association of Orofacial Pain Questionnaire (AAOPQ) and the Jaw Symptom & Oral Habit Questionnaire (JSOHQ). **Results:** Thirty-eight patient records were included, with a prevalence of women (84.6%) and a mean age of 37.42 ± 14.32 years. The patients who were classified with severe TMD by the FAI exhibited more positive responses on the AAOPQ (6.25 ± 1.42 ; one way ANOVA $F=15.82$), with a statistically significant difference when compared to patients with mild TMD (3.0 ± 1.22 ; $p<0.01$). A positive correlation ($r=0.78$; $p<0.01$) was found between the number of positive responses on the AAOPQ and the sum of the JSOHQ scores. Patients who were classified with severe TMD on the FAI exhibited higher scores on the JSOHQ (18.58 ± 4.96 / one way ANOVA $F=14.43$), with a statistically significant difference when compared to patients with moderate (12.08 ± 5.64 ; $p<0.01$) and mild TMD (7.46 ± 4.89 ; $p<0.01$). **Conclusion:** In the sample studied, there was congruence between the instruments used to differentiate patients with severe and mild TMD. The selection of instruments should be rational, in order to improve the

quality of the results. **Keywords:** Temporomandibular Joint Disorders; Signs and Symptoms; Surveys and Questionnaires; Facial pain

Introduction

Temporomandibular disorders (TMDs) is a collective term that defines a subgroup of painful orofacial disorders that involve pain in the temporomandibular joint (TMJ), fatigue in the cranio cervico facial muscles and limited mandibular movements.¹ Muscle-related conditions represented the largest subgroup.²

A number of assessment tools have been proposed for use in clinical practice and research involving individuals with TMD, including: the American Academy of Orofacial Pain questionnaire (AAOPQ); the Helkimo Index (HI); the Fonseca anamnestic index (FAI); and the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD), which can be used with clinical assessments, radiography, Magnetic Resonance Imaging, Computed Tomography and electromyography.^{3,4}

An effective scale must identify patients correctly and discriminate normal subjects. Helkimo constructed an index by summing up the presence of symptoms and assigning a grade of severity when a certain level was exceeded. This index seems to provide a satisfactory indication of the severity of TMD. Helkimo also introduced a fixed set of symptoms, with well-defined assignments in the segments of the index and a computation of the index-class, thereby enabling the comparison of results.⁵

The severity of TMD is often analyzed. To do so, the Fonseca anamnestic index (FAI) has been widely employed in clinical and epidemiological studies.^{1,3,4,6} However, Chaves et al. (2008) suggested that the FAI has not yet been completely validated and does not offer a

diagnostic classification of TMD. Thus, data obtained using this index are restricted to the classification of the severity of signs and symptoms of TMD.⁴

A number of authors have used two or more instruments to determine the level of agreement between them, as well as with clinical findings. (7,8,4) It is extremely important to select a reliable instrument when assessing TMD. Only scales that provide reliable reflections of the underlying problems can be used to differentiate between healthy and clinically ill individuals.⁵ The aim of the present study was to assess the epidemiological profile of TMD patients treated in the dental clinic of Paulista University (Brazil). In addition, this study sought to identify the relationship between instruments used to screen and diagnose temporomandibular disorders.

Methods

A retrospective study was conducted between July 2015 and January 2016 using medical records of patients with TMD. This study included male and female patients who attended the institution for initial examinations. These patients were aged between 18 and 60 years and exhibited at least mild TMD, according to the FAI. The following exclusion criteria were applied: missing teeth (except third molars); open bite; overbite; crossbite; use of partial or total dentures; history of trauma to the face or TMJ; systemic diseases (arthritis, arthrosis or neuromuscular conditions); and dental or medical treatment.

The medical history and physical examination data, particularly those related to the diagnosis of TMD and TMJ function, were collected, including mouth opening (the inter-incisor distance) and pain during muscle palpation (recorded on a scale of 0 to 10). The following instruments were used to assess the severity of the signs and symptoms of TMD:

the Fonseca Anamnestic index (FAI); the Helkimo index (HI); the American Association of Orofacial Pain Questionnaire (AAOPQ) and the Jaw Symptom & Oral Habit Questionnaire (JSOHQ).

The FAI was used to assess the severity of TMD, based on signs and symptoms. This index is made up of ten items with three response options: yes (10 points), sometimes (5 points) and no (0 points). The score is determined by the sum of the points of all items and leads to the following classifications: absence of signs and symptoms of TMD (0-15 points); mild TMD (20-45 points); moderate TMD (50-65 points) and severe TMD (70-100 points).³

Concerning the Helkimo index,⁹ the present study used the clinical dysfunction index, which involves a functional assessment of the masticatory system. According to the presence and intensity of the symptom, a score of 0, 1 or 5 points was assigned to each patient. The following symptoms were analyzed: 1- Range of mandibular motion; 2- TMJ function impairment; 3- Muscle pain during palpation; 4- TMJ pain during palpation; 5- pain during mandibular movement. The sum of the scores classified the individuals as follows: 0 points - clinically free from symptoms; 1-4 points – mild dysfunction symptoms; 5-9 points – moderate dysfunction symptoms; 10-25 points – severe dysfunction symptoms.

The AAOP Questionnaire contains 10 self-explanatory questions (“yes” and “no” answers) on the most frequent signs and symptoms of orofacial pain and TMD. The Helkimo patient-history index (modified by Fonseca) contains 10 self-explanatory questions (“yes” and “no” answers) based on different symptoms of masticatory dysfunction.⁷

The Jaw Symptom & Oral Habit Questionnaire (JSOHQ) contains 13 questions, eight of which are related to jaw pain, with five related to jaw function. There are five possible answers to each question, ranging in a graded order from no signs or symptoms to extreme

signs or symptoms. For analysis purposes, the answers were converted to an ordinal ranking system (from 0 to 4).

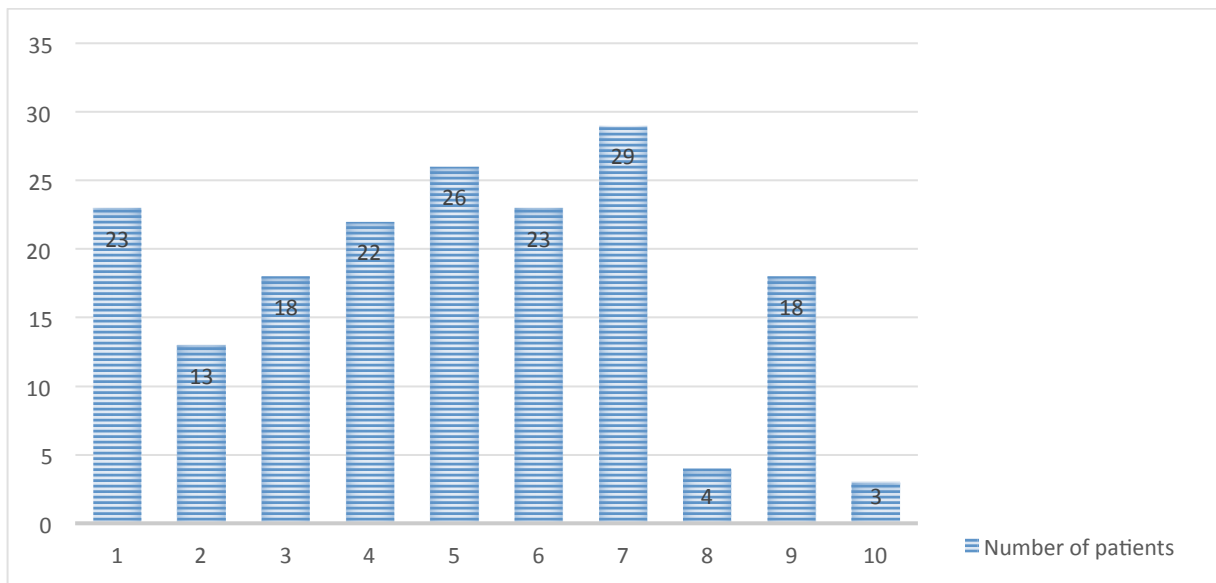
The data were analyzed using descriptive and correlational statistics and SPSS v. 18.0 for Windows (SPSS Inc, Chicago, IL). The results were considered statistically significant for $p < 0.05$. The present study was approved by the Research Ethics Committee of the Faculty of Dentistry of the UNIP.

Results

In the present study, the records of 57 patients who had been attended for the first time during the study period were gathered. Of these, 38 fulfilled the inclusion criteria. There was a prevalence of women (84.6%), white skin (76.9%), a mean age of 37.42 ± 14.32 years and a mean body mass index of 23.94 ± 3.98 kg/cm². Most of the patients reported some form of systemic disease (60.5%), with 18.4% mentioning depression. Ten women claimed to use oral contraceptives. Five main categories of pain were identified: facial pain (31.6%); difficulty while chewing (28.9%); headache (10.5%); bruxism and tooth clenching (7.9%) and clicking noises in the TMJ (5.3%). Twenty-two of the patient records mentioned difficulties while chewing and 21 patients reported parafunction. The maximum mouth opening values ranged from 31 to 60 mm (mean of 42.15 ± 9.34 mm).

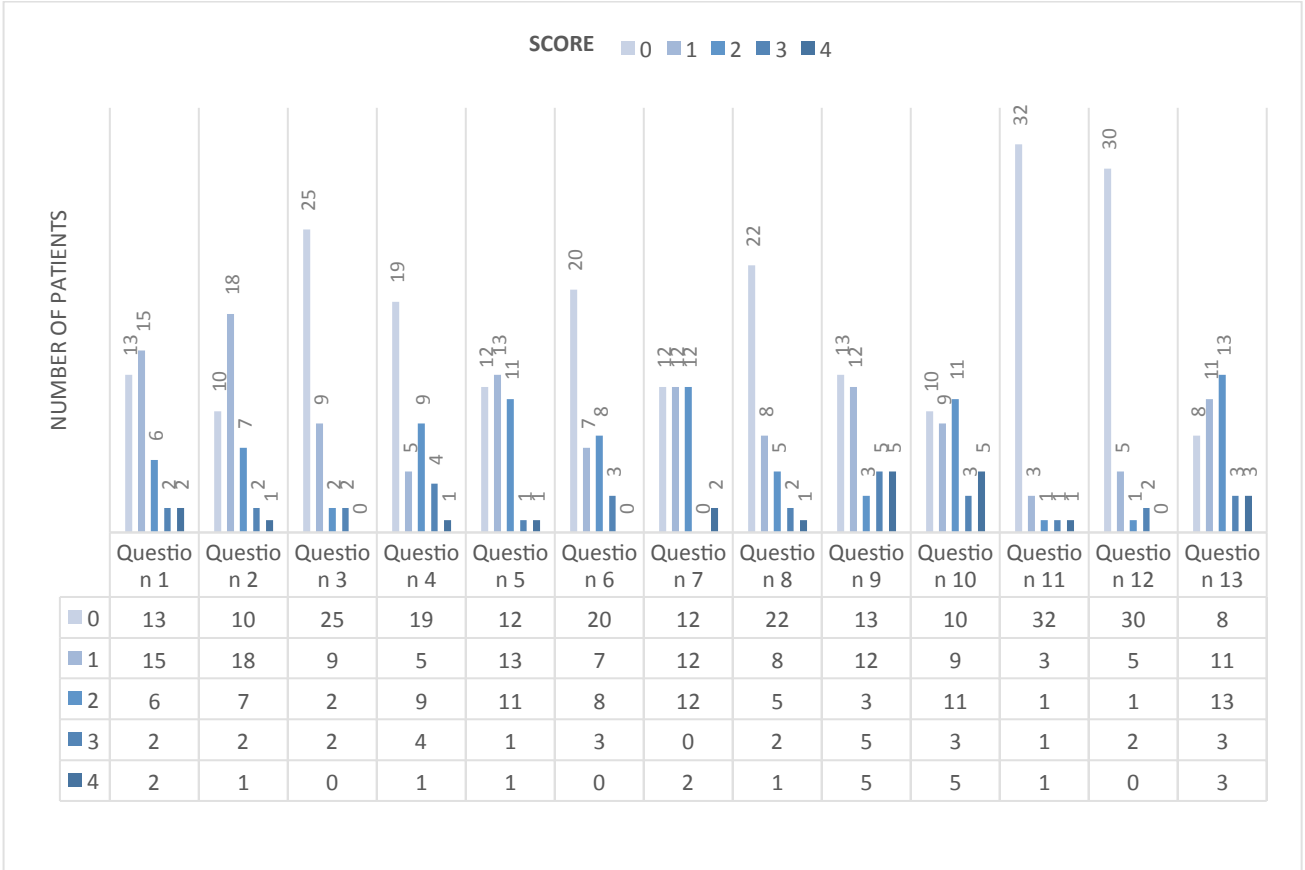
Concerning the Helkimo index or clinical craniomandibular dysfunction, the most common form of disorder was severe (18 patients), which was distributed among the indices 3, 4 and 5 (n=11/5/2), followed by mild (11 patients) and moderate (9 patients). Concerning the FAI, there was a balanced distribution among the patients, who were classified as follows: mild TMD (n=14); severe TMD (n=13) and moderate TMD (n=11).

In the AAOPQ, there was a greater number of positive responses for question 7, referring to the presence of headaches, toothaches and neck pain (n=29), and question 5, referring to the presence of stiffness and fatigue in the jaw (n=26). The results related to the frequency of positive responses are displayed in Graph 1.



Graph 1 – Frequency of positive responses on the American Academy of Orofacial Pain questionnaire.

The mean score on the Mandibular Symptoms and Oral Habits Questionnaire was 12.34 ± 6.65 . Higher scores were obtained for the questions related to difficulty while opening the mouth, discomfort while chewing and joint pain and noises. Graph 2 displays the sum of the scores for each question.



Graph 2 – Frequency of the scores for each question of the Mandibular Symptoms and Oral Habits Questionnaire

Muscle palpation was reported in 16 of the records. A greater intensity of pain in the palpated muscles was noted during the intraoral examination. Table 1 displays the results.

Table 2 displays the pain results for the palpation of the TMJ.

Table 1 – Response of the patients in relation to pain during muscle palpation

Muscle/ Side Score	Right (n)		Left (n)	
	Above 5	Below 5	Above 5	Below 5
Anterior temporal	05	11	06	10
Medial temporal	02	14	05	11
Posterior temporal	02	14	05	11
Masseter	08	08	09	07
Sternocleidomastoid	06	10	05	11
Digastric	02	14	04	12
Platysma	04	12	04	12
Temporal (Intraoral)	06	10	09	07
Medial pterygoid	05	11	08	08
Lateral medial pterygoid	06	10	08	08

Table 2 – Response of the patients in terms of pain during palpation of the TMJ

Score	Right (n)		Left (n)	
	Above 5	Below 5	Above 5	Below 5
Lateral pole	05	11	03	13
Posterior pole	04	12	07	09

Higher scores were recorded on the Mandibular Symptoms and Oral Habits Questionnaire for patients with severe TMD, according to the Helkimo index (one way ANOVA, 15.94 ± 5.05 , $F=7.05$; $p<0.01$), when compared with those with mild TMD (7.10 ± 4.65 ; $p=0.002$). This difference was not found for patients with moderate TMD, when compared with those with severe TMD (12.27 ± 7.87 ; $p=0.258$) or those with mild TMD ($p=0.127$). Table 3 displays the correlation between the Helkimo index and the FAI.

A positive correlation ($r=0.78$; $p<0.01$) was found between the number of positive responses on the AAOPQ and the sum of the scores on the Mandibular Symptoms and Oral Habits questionnaire. Patients who were classified with severe TMD according to the FAI exhibited higher scores on the Mandibular Symptoms and Oral Habits questionnaire (18.58

± 4.96 / one way ANOVA $F=14.43$), with a statistically significant difference when compared to patients with moderate TMD (12.08 ± 5.64 ; $p<0.01$) and mild TMD (7.46 ± 4.89 ; $p<0.01$).

Patients who were classified with severe TMD by the FAI exhibited more positive responses on the AAOPQ (6.25 ± 1.42 ; one way ANOVA $F=15.82$), with a statistically significant difference when compared to patients with mild TMD (3.0 ± 1.22 ; $p<0.01$). No significant differences were recorded between patients with severe and moderate TMD (5.69 ± 1.93 ; $p=0.648$).

Table 3 – Distribution and classification of patients according to the Helkimo Index (The Clinical dysfunction component) and the Fonseca Anamnestic Index

		Fonseca Anamnestic Index (n)			Total
		Mild TMD	Moderate TMD	Severe TMD	
Helkimo Index (n)	Score	20-40	45-65	70-100	
Mild	1-4	7	3	1	11
Moderate	5-9	4	3	2	9
	10-13	2	3	6	11
Severe	15-17	1	2	2	5
	20-25	0	0	2	2
Total		14	11	13	38

n – number of patients

Discussion

In general, all of the indices used sought to assess the frequency and severity with which the symptoms associated with TMD manifest themselves.^{4,7} Patients with TMD may suffer from myalgia and joint disorders, which contribute to the diversity of the signs and symptoms reported. It was noted that the indices exhibited statistically significant differences when mild and severe disorders were compared using the Helkimo Index and the JSOHQ and when using the FAI and the AAOPQ, with no significant difference found for individuals

classified with moderate TMD. This may be due to the fact that the moderate form of the disorder does not differ greatly from the other stages in terms of the frequency of symptoms.

Helkimo was a pioneer in developing indices to measure the severity of TMD. In an epidemiological study, Helkimo developed an index that was further divided into anamnesis, clinical and occlusal dysfunction. The index sought to identify the prevalence and severity of TMD in the general population.^{5,9,10} However, the relationship between the anamnesis, occlusal and dysfunction components of the Helkimo index was not clear.¹⁰ Thus, in the present study, only the dysfunction index was used, similar to a previous study.¹¹ The Fonseca Anamnestic Questionnaire is a modified version of the Helkimo anamnestic index and is one of the few instruments available in Portuguese that assesses the severity of TMD symptoms.¹² Despite the similarities in the results for the severity of TMD calculated by the FAI and the HI, they were not completely equal. These indices exhibit certain similarities among the symptoms studied, such as: pain upon opening the mouth; pain in the TMJ and joint noises. Nevertheless, the HI is an objective clinical assessment, whereas the FAI is a questionnaire in which the patient indicates the presence or absence of the symptom studied. In addition, none of the indices provide a complete assessment and consequently, flaws are expected.

A positive correlation was found between positive responses on the AAOPQ and the sum of the scores on the JSOHQ. This can be explained by the fact that the questions deal with equivalent subjects, which contributed to the similarity of the results. The equivalent JSOHQ and AAOPQ questions are (question/question): 1/1 – pain or difficulty opening the mouth; 2/3 – pain during mandibular function/ while chewing; 9/4 – joint noises; 11-12/5 – locking of the jaws; 5/6 – pain in the TMJ.

Manfredi et al. (2000) assessed the sensitivity and specificity of the questionnaire used for the screening of orofacial pain and TMD, as recommended by the American Academy of

Orofacial Pain. A correlation was found between positive responses and the clinical findings of the specific anamnesis for TMD. Questions 3 and 5 deal with the characteristic pains of TMD such as difficulty and/or pain when chewing or talking, as well as a feeling of tiredness in the jaws. These are the most significant in the questionnaire, due to the link with occlusal conditions and the presence of habits such as grinding or clenching teeth. The authors noted that the questionnaire is sensitive and correlated with extracapsular pathologies or myogenic disorders in which the main complaint is diffuse facial pain.⁸

Franco-Micheloni et al. (2014) showed that questions 8 and 10 of the AAOPQ demonstrated low and non-significant inter-item correlations with the clinical findings, corroborating their low contribution to the questionnaire. More than two positive answers for the eight item questionnaire could be used as a threshold for the detection of TMD.¹³

Campos et al. (2014) conducted a study with 700 women to assess the validity and reliability of the FAI. The authors identified that questions 4, 8 and 10 hindered the internal consistency of the instrument. When these questions were excluded, the FAI exhibited a satisfactory internal consistency.⁶ The FAI exhibited a high degree of diagnostic accuracy and can be used to identify myogenous TMD in women.³

Chaves et al. (2008) suggested that the FAI has not yet been completely validated and does not offer a diagnostic classification of TMD. Thus, data obtained using this index are restricted to the classification of the severity of the signs and symptoms of TMD.⁴

In the present study, the classification of severity (according to the FAI) enabled us to establish a statistically significant difference in relation to the JSOHQ scores for mild, moderate and severe stages of the disorder. This was possible due to the similarity of the questions concerning the presence of signs and symptoms, such as (FAI question/JSOHQ

question): 1/1- pain upon opening the mouth; 2/2- pain while chewing/moving the mandible; 3/3- muscle fatigue; 6/5- pain in the TMJ region; and 7/9 – joint noises.

The AAOPQ and the FAI seem to be ideal tools for an initial screening of patients, due to the low cost and the fact that they are easy to apply. These questionnaires are quick-to-apply and cost-effective for large epidemiological studies. The severity of TMD in the FAI and the number of positive responses in the AAOPQ can help clinicians decide whether a more comprehensive assessment is required to obtain a definitive TMD diagnosis.¹³ The FAI and the AAOPQ are somewhat similar in terms of the signs and symptoms assessed (FAI question/AAOPQ question): 1/1: difficulty in opening the mouth; 2/3 – difficulty in moving the mandible; 3/5 – fatigue in the jaws; 4/7 - headaches; 6/6 – pain in the TMJ region (pre-auricular); 9/9 – abnormal occlusion/bite.

Several studies have sought to analyze the relevance of certain questions within the instruments used in the present study.^{6,8} A number of authors have proposed the removal of questions that do not seem to contribute to the diagnosis or classify the severity of the disorder. In fact, none of these instruments are flawless. However, due to the ongoing debate, with very similar questions and a congruence of results, is it necessary to use all of these indices? Which instrument should be selected for the diagnosis and which should be used for classification? How should the results of a certain treatment protocol be monitored?

There is a consensus in the literature concerning the diagnostic instrument: the RDC/TMD has been accepted as a universal diagnostic instrument for TMD's. The RDC/TMD was proposed in 1992 by Dworkin and Leresche¹⁴ and has been accepted and used in several clinical and epidemiological studies.¹⁵ This instrument is continuously being improved.¹⁶ Concerning the classification, the present study involved two instruments (Helkimo and FAI), the latter of which seemed to be more adequate since it decreases the

number of categories and has been used recently in the literature. The authors of the present study monitored the results.

No diagnostic or assessment instrument should be used in the place of a physical examination. Unfortunately, clinical data were not found for all of the patients, which prevented comparisons with the indices. The present study contains the limitations that are inherent to retrospective studies: the limited size of the sample; it did not use RDC/DTM in the diagnosis; and the inclusion of patients. Further studies could rationalize the selection of the assessment instrument in accordance with the objective, whether it be to separate the ill from the healthy or to classify, diagnose or monitor/compare the results of different treatment protocols. This study should be viewed as a preliminary study seeking to highlight an issue of paramount importance: how to select instruments correctly when assessing TMD.

Conclusion

In the sample studied, there was congruence between the instruments used to differentiate between patients with severe TMD symptoms and patients with mild TMD symptoms. Further studies could determine the adequate instruments for different objectives.

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Assessment of Functional Improvements after Arthroscopy in Patients with Temporomandibular Disorders

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Abstract

Objective: The aim of the present study was to compare the mandibular function of patients that were submitted to operative arthroscopy (OA) and arthroscopic lysis and lavage (ALL) of the TMJ.

Method: A retrospective study was conducted using medical records of patients with internal derangement of the TMJ who were submitted to arthroscopic surgery between January 2013 and July 2015. The following data were recorded: age; gender; OA (Group 1); ALL (Group 2); maximal interincisal opening (MIO); and the presence or absence of pain. The measurements were taken during follow up periods of one month and two months. The data were analyzed by descriptive and correlational analysis using SPSS (Version 18.0) software.

Results: Medical records of 42 patients were analyzed. Of these, 17 were submitted to OA and 25 were submitted to ALL. The MIO improvement was greater in Group 1 (2.24 ± 1.78 mm) than in Group 2 (1.92 ± 1.73 mm), without a statistically significant difference ($U=193.0$; $p=0.54$). In both groups, the pre-operative MIO was lower than the post-operative MIO after one and two months. Two patients that were submitted to ALL complained of pain in the TMJ after two months.

Conclusion: Patients that do not respond to conservative treatment seem to benefit from the use of arthroscopic surgery, in that they exhibit less pain in the TMJ, regardless of the technique used (OA or ALL). The MIO improvements found in the present study were limited.

Keywords: Arthroscopy; Temporomandibular Joint; Temporomandibular Joint Disorders

Introduction

Temporomandibular disorders (TMDs) is a generic term that describes a group of diseases that affect the temporomandibular joint (TMJ). Generally, these conditions are accompanied by signs and symptoms that include pain, limited mandibular movements and noises emanating from the joint. It is estimated that 40-75% of the population exhibit at least one sign of the disease and 33% of the population exhibit at least one symptom.¹ More than 80% of patients that seek secondary care can be adequately treated by a combination of conservative techniques, including rest, reassurance, non-steroidal anti-inflammatory medication and bite-splints.²

Internal derangement (ID) is an intra-articular condition in which there is a disruption in the normal relationship between the articular disc of the TMJ (articular eminence) and the condyle when the joint is at rest or in function.³ Most of these derangements can be treated successfully with non-surgical therapy. Patients who do not respond to this treatment may require more invasive procedures, such as arthrocentesis and arthroscopy.⁴

The most popular classification for ID of the TMJ is that proposed by Wilkes (1989)⁵, based on clinical and radiological findings. It was modified by Bronstein and Merrill, who added arthroscopic findings.⁶ There is a certain level of debate about indications for arthroscopic procedures in accordance with the Wilkes stages, although no consensus has been reached.⁷

Lavage of the TMJ using arthroscopy was first conducted by Ohnish. The visualization of the joint was not necessary to accomplish the treatment objectives. Consequently, arthrocentesis has been used as a modification of arthroscopic lavage of the TMJ.⁴ Arthroscopic lysis and lavage (ALL) preceded the introduction of arthrocentesis for the TMJ by Murakami et al. (1987)⁸, as well as the modification proposed by Nitzan et al. (1991), involving two needles.⁹

The most important aims of lysis and lavage of the TMJ are to eliminate inflamed synovial fluid, to release the disc, to reduce pain and to enable the mobilisation of the joint by flushing the upper joint space. With knowledge, experience and skill, and considering any relevant anatomical variations, these techniques should enable the surgeon to enter the joint easily and to complete the procedure successfully, without complications.¹⁰

Minimally invasive TMJ surgery (MITMJS) became an important treatment tool for disorders that primarily involve this joint, particularly TMJ internal derangement and osteoarthritis. This surgery can alleviate pain and improve function with minimal expected morbidity.¹¹

The successful management of patients with TMDs requires placing more emphasis on reducing joint loading, inflammation and pain, thereby maximizing joint mobility, and less emphasis on the restoration of anatomic relationships.¹² Arthroscopy has been used to reduce the symptoms of patients with TMD, although its effectiveness has still not been completely determined.¹ The aim of the present study was to compare the mandibular function outcomes of patients that were submitted to operative arthroscopy (OA) and arthroscopic lysis and lavage (ALL) of the TMJ.

Methods

A retrospective study of the medical records of patients treated in the Oral and Maxillofacial Surgery Department of Paulista University (São Paulo, Brazil) was conducted. This study included patients with internal derangement of the TMJ that were submitted to arthroscopic surgery between January 2013 and July 2015. The diagnosis of ID was based on a clinical examination and Magnetic Resonance Imaging. These patients had received non-surgical treatment (bite splints and physiotherapy) for six months, without improving pain

symptoms or the maximal interincisal opening (MIO). All patients were included in Wilkes stages II and III. The present study included patients of both genders, aged between 18 and 60 years, who received arthroscopic treatment on the temporomandibular joint and had a minimum follow-up period of two months.

The following exclusion criteria were applied: patients with chronic systemic diseases; patients with widespread pain, such as fibromyalgia and rheumatoid arthritis; patients with other TMDs; and patients who had been previously submitted to TMJ surgery. The following data were recorded: age; gender; OA; ALL; MIO; and the presence or absence of pain during function. The measurements were taken in the pre-operative and follow up periods (one and two months).

The data were analyzed using descriptive and correlational statistics, with the support of SPSS software v. 18.0 for Windows (SPSS Inc, Chicago, IL). The Chi-square test was used to determine the relationship between the variables. Concerning mandibular function, the data were submitted to the Shapiro-Wilk test and the sample exhibited an abnormal distribution. The Friedman test was used to compare the MIO results in the groups, followed by the Wilcoxon signed-rank test. The Mann-Whitney U test was used to compare the Maximal Interincisal Opening (MIO) in each period assessed and the MIO improvements. The level of significance was set at $p < 0.05$.

The present study received approval from the ethical review board of the Research Ethics Committee of Paulista University. The identity of the participants was protected.

Results

The authors of the present study identified 133 medical records of patients that were submitted to surgical procedures on the TMJ. Forty-two patients (managed with arthroscopic surgery) satisfied the inclusion criteria. Most of them were women (85.7%), aged between 24 and 55 years (mean age of 37.50 ± 6.95 years). Four patients received arthroscopic surgery on only one TMJ. The sample was divided into two groups, depending on the arthroscopic technique used: Group 1 – Operative arthroscopy; Group 2 - arthroscopic lysis and lavage.

Group 1 contained 17 patients (14 women and 3 men), with a mean age of 38.13 ± 8.80 years. Group 2 contained 25 patients, most of whom were woman (n=22), with a mean age of 37.08 ± 5.56 years. No statistically significant differences were found between the groups for age or gender distribution ($F=3.37$, $p=0.07$; $X^2=0.26$, $p=0.60$). In the pre-operative period, all of the patients complained of pain in the TMJ (spontaneous or during function). Table 1 and Figure 1 display the functional results (Maximal Interincisal Opening - MIO), according to the follow-up period and the treatment group. The MIO improvement was greater in Group 1 (2.24 ± 1.78 mm) than in Group 2 (1.92 ± 1.73 mm), although the difference was not statistically significant ($U=193.0$; $p=0.54$).

After two months, only two patients complained of pain. Both were woman from Group 2. Most of the patients exhibited an MIO equal to or greater than 35 mm (n=27). Fifteen patients exhibited an MIO lower than 35 mm (Group 1 n=7/ Group 2 n=8).

Table 1 – Evolution of mouth opening from the pre-operative period to the six month post-operative period, according to procedure (ALL and AO).

Groups	Number of patients/ joints	Maximal interincisal opening (mm)					
		Pre-operative		Mean/ SD		1 month post-operative	2 months post-operative
Operative							
Arthroscopy	17/32	32.71 Aa	2.49	34.47 Ba	3.20	34.82 Ba	2.43
Arthroscopic Lysis and Lavage	25/48	34.44 Aa	3.90	36.28 Ba	3.29	36.36 Ba	3.10

NOTE. Matching letters (A and B) indicate no statistically significant differences in each Group according to the follow-up period (5%).

Matching letters (a) indicate no statistically significant differences between Groups 1 and 2 in each follow-up period (5%).

In Group 1, the MIO improved in accordance with the follow-up time, with statistically significant differences (Friedman, $X^2=28.75$; $p<0.01$). These differences were identified between the pre-operative MIO and the one-month follow-up ($z=-3.61$, $p<0.01$) and between the pre-operative MIO and the two-month follow-up ($z=-3.89$, $p<0.01$). Similar results were found in Group 2 (Friedman test, $X^2= 23.27$; $p<0.01$). These differences were identified between the pre-operative MIO and the one-month follow-up ($z=2.59$; $p<0.01$) and between the pre-operative MIO and the two-month follow-up ($z=-3.31$; $p<0.01$). No statistically significant difference was found between the MIO recorded in the one-month and two-month follow-ups in both groups.

No statistically significant differences were found between Groups 1 and 2 for the MIO according to the assessment period [pre-operative ($U=144.0$; $p=0.07$); one month ($U=156.5$; $p=0.14$); two months ($U=149.0$; $p=0.10$)].

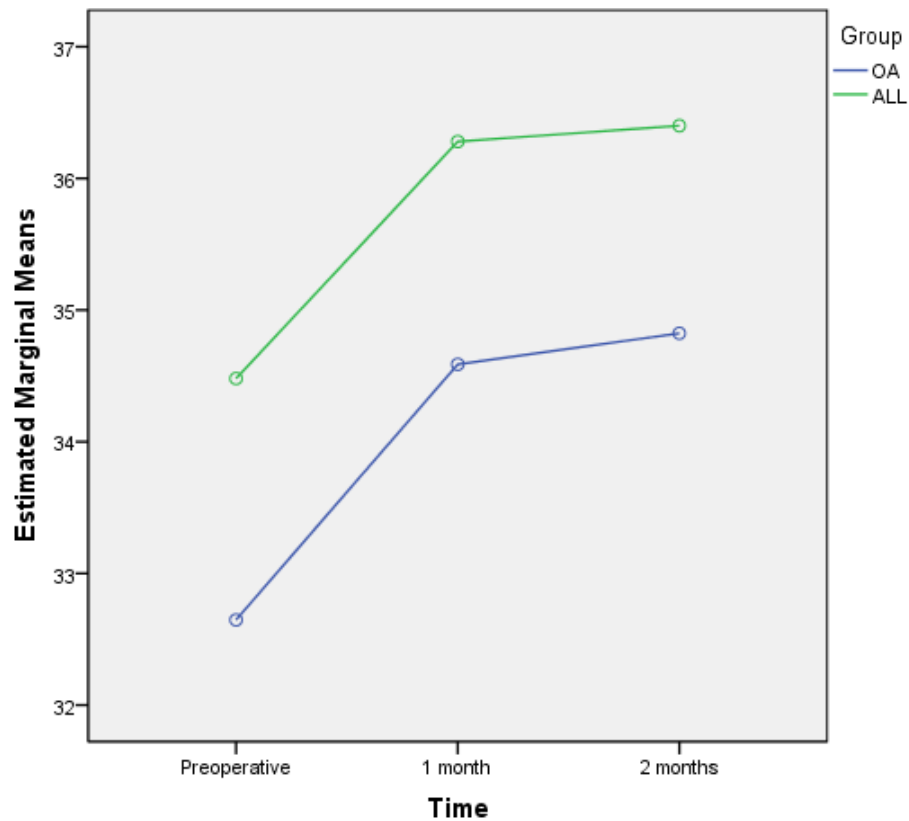


Figure 1 – Mean values for Maximal interincisal opening according to the treatment and follow up periods: operative arthroscopy (OA) and arthroscopic lysis and lavage (ALL)

Discussion

Few cases of TMDs lead to an indication for surgery, conservative non-surgical treatment is often the first approach. Clinicians are faced with the critical task of recognizing when to operate (and when not to operate) and must also determine the most effective surgery to treat a particular patient.¹³ The present study compared the functional results of operative arthroscopy and arthroscopic lysis and lavage and found relatively low MIO improvements after arthroscopic surgery. However, most patients did not complain of pain in the TMJ after two months of follow-up.

Any surgical intervention is part of a complete management sequence. Appropriate non-surgical treatment should follow the natural course of the TMD. There is no consensus

regarding the time, duration, and sort of modality.⁷ Indications for minimally invasive TMJ surgery are provided for patients that undergo non-surgical treatment without improvement.¹¹ The use of arthroscopy early in the disease process is mainly considered in cases of acute closed lock.² The present study contains limited results regarding jaw function after OA or ALL, possibly due to the individual characteristics of the patients, some of whom exhibited some form of disease chronicity and did not respond well to conservative treatment. Another important factor to consider is the compliance of patients with the physiotherapy protocol. The manner in which the patient and the professional deal with this subject could affect the results of the treatment. Physiotherapy should be performed regularly and as soon as possible after the arthroscopic procedure.

All patients included in the present study underwent conservative treatment involving splits and physiotherapy. The non-surgical regimen is an important part of the overall treatment plan, which is designed to reduce inflammation, decrease adverse joint loading, restore the range of motion and manage pain.¹² How effective is lavage of the TMJ, when compared with non-surgical therapy? Both treatments appear to be equally effective in terms of reducing symptoms, with insignificant differences. However, lavage is slightly more effective in the reduction of pain. It is difficult to establish this comparison due to the variety of modalities involved in non-surgical treatment protocols.¹⁴

In the literature, less than 10% of patients that attend a TMJ clinic require arthroscopy. Approximately 70% are “cured” by this procedure, with a further 10% requiring subsequent open joint surgery.² Gonzalez-Garcia et al (2015) analyzed the outcomes of ALL in relation to pain reduction and MIO in 16 studies that were conducted between 1987 and 2011. The global success rates ranged from 50 to 95%.¹¹

Upon comparison of the ALL and the OA, no differences were found in the post-operative sign and symptoms.⁷ In the present study, similar results were recorded for both

techniques in terms of jaw function. It was expected that patients who underwent operative arthroscopy would exhibit less improvement in the initial follow-up due to greater tissue handling and swelling. However, this was not the case, possibly due to the fact that functional limitations are often associated with pain. Pain control after both procedures was correlated with a significant functional improvement. It is important to note that these results do not intend to promote the use of one technique over another, since the choice is based on treatment strategies and pathological features.

The choice of ALL or OA must be made in accordance with the intra-articular pathology and the surgeon's capabilities.⁷ The introduction of a second cannula is not necessarily accompanied by the performance of another technique on the tissues of the joint, other than lysis of the adhesions with instrumentation.¹¹ In the present study, the use of a second cannula was required when it was necessary to remove pathological tissue.

A recent literature review addressed seven randomized controlled trial that compared the outcomes of arthroscopy with those of others treatment protocols. The outcomes addressed were pain and maximal interincisal opening. No differences were found for pain after six months when arthroscopy was compared with non-surgical treatment. Arthroscopy led to a greater improvement in maximum interincisal opening after 12 months, when compared with arthrocentesis.¹ The basic principles of TMJ arthroscopy require the preservation of the synovial membrane, in order to ensure joint lubrication, and articular cartilage, to maintain the resiliency and compressibility of the disc. Other studies have addressed intra-articular biopsies and the removal of adhesions.⁷

Lavage of the upper joint compartment forces the flexible disc away from the fossa, washing away degraded particles and inflammatory components, and decreasing the intra-articular pressure whenever the joint is inflamed.¹⁰ Arthroscopy is more effective than

arthrocentesis in terms of increasing joint movement and decreasing pain. Both have comparable post-operative complication rates. One reason for this result could be the larger diameter of the portal with high pressure, which favors a more extensive removal of inflammatory mediators, resulting in a greater reduction of pain. Chronicity of joint symptoms and old age are poor indicators of the outcome of both procedures. The disadvantages of arthroscopy include the following: it requires general anaesthesia; it is more invasive, it has been correlated with greater post-operative morbidity; it is more expensive; and there is a greater risk of complications.⁴

Arthroscopic surgery is probably among the safest procedures performed by maxillofacial surgeons. The arthroscope that is placed in the TMJ measures 1.9 mm or less. Even the largest instruments only reach approximately 3 mm. The procedure can be performed by a single puncture with an outflow system, which is created using an 18-gauge needle, or a more complex procedure that involves a multiport or triangulation technique, in which one portal is used for the arthroscope and a second portal is used for instrumentation.¹⁵ However, arthrocentesis and arthroscopy are not without risks. The potential complications of arthroscopy can also occur in arthrocentesis, although the incidence and extent of complications seems to be lower for arthrocentesis.⁹ Arthroscopic lysis and lavage involve more possible complications than arthrocentesis, which is clinic-based, cost-effective and minimally invasive.¹⁰ Damage to the facial and auriculo-temporal nerves can occur.⁴ The most severe complication is damage to the ear, which is caused by the inadvertent misplacement of the arthroscope, leading to the perforation of the external auditory canal and the tympanic membrane.¹⁵

There is controversy with regards to the position of the disc in relation to the onset of symptoms in the TMJ. A number of investigators have advocated the anatomic reduction of the disc through open surgery or OA in order to control the disease, whereas others have

reported excellent results with arthrocentesis or ALL. Asymptomatic volunteers may exhibit disc displacement, while a normal disc position has been observed in symptomatic patients.¹¹ ALL has not been correlated with the repositioning of the disc in long-term follow-up, although it has been associated with the mobilization of the disc and the removal of degenerative products that produce inflammation.¹⁶ The position of articular disc was not evaluated in this study, a future long term study could be performed to evaluate this subject in long term follow up.

TMJ surgery is not always successful. The patient's pre-operative symptoms may persist or even increase after surgery. Unsatisfactory results can occur for multiple reasons, including a misdiagnosis of the original pathologic condition, the incorrect selection of a surgical technique, technical failures, complications and systemic diseases. Additional consideration should be given to patients with psychiatric disorders, drug-dependent behavior or unrealistic expectations.¹³

Aggressive post-operative rehabilitation is sometimes necessary: passive motion regimens should be started immediately in the recovery room as they prevent the reformation of adhesions and clear hemarthroses, while also stimulating the production of synovial fluid. Reductions in joint loading and inflammation are essential to post-operative rehabilitation, as is the control of pain with medication.¹²

Currently, clinicians are having much greater success in the management of patients with various TMDs. Improvements have occurred as a result of the better understanding of the etiology of many TMDs and the consequent increase in approaches for their management. Treatment has become much more conservative. Minimally invasive treatment protocols have eliminated many more complex surgical procedures.¹⁷

Analysis of the literature concerning the clinical outcomes of MITMJS when treating ID identifies three main concerns: most of the studies are retrospective case reports, with only

a few randomized studies available; the inclusion criteria for each technique are not usually well-defined; there is no consensus among investigators on how to measure success.¹¹ Rigon et al (2011) performed a search in the main databases of Brazilian and Latin American Studies and did not identify a single randomized controlled trial conforming to the restricted inclusion criteria for their review.¹

The success rate was reported in terms of the percentage of patients with reduced pain or increased mouth opening. Other authors considered the technique successful when a visual analogue score of less than 20 and an MIO of 35 mm or more were obtained.¹¹ The lack of a single universally accepted surgical protocol means the surgical management of TMDs is challenging. The reoperation rate was 20% and 10% of the patients underwent further surgical interventions after the arthroscopic procedure.¹³ This study has limitations related to retrospective design and short postoperative follow-up. The long-term monitoring could identify the stability of results and the success rate of the techniques tested.

Conclusion

Patients that do not respond to conservative treatment seem to benefit from the use of arthroscopic surgery, in that they exhibit less pain in the TMJ, regardless of the technique used (OA or ALL). The MIO improvement found was limited, which could be due to the post-operative physiotherapy protocol and the chronicity of the disease.

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3. DISCUSSÃO

Disfunção temporomandibular é um termo que se aplica as alterações funcionais relativas a articulação temporomandibular e estruturas mastigatórias associadas (Chaves et al., 2008). As patologias envolvidas dentro desta categoria apresentam tratamento complexo e multidisciplinar por apresentar uma ampla variedade de sinais e sintomas e condições sistêmicas associadas (Zulqarnain et al., 1998). Profissionais das diferentes áreas devem trabalhar em equipe, cada um avaliando e intervindo nos possíveis fatores causais relacionados a sua respectiva especialidade. Neste trabalho foram abordados os aspectos referentes a várias etapas que compreendem desde a avaliação inicial ao tratamento dos pacientes com DTM. A seleção dos pacientes com DTM é um desafio, devido à variedade das patologias que acometem a ATM e estruturas adjacentes, além disso, muitos pacientes depois da remissão dos sintomas não seguem em acompanhamento com o profissional de saúde. A diversidade de profissionais procurados, a falta de acompanhamento e a característica intermitente dos sintomas limita o acompanhamento da evolução da doença, assim dentro de um serviço de tratamento a estas patologias são recebidos pacientes com quadros clínicos diversos.

No primeiro estudo, foi enfatizado a forma como o paciente lida com o aparecimento dos sintomas ligados a DTM, ou seja, quando e qual o profissional que procura, e quais os sintomas predominantes. O dentista foi o profissional mais procurado, porém dores em região de cabeça e pescoço trazem confusão ao entendimento do paciente, quanto a localização da dor e isto faz com que procurem outras especialidades médicas. Estas por vezes encaminham o paciente ao dentista, porém ocorrem situações de “perda de tempo” com tratamentos poucos

efetivos. Foi observado que a severidade da DTM não foi relacionada diretamente ao uso da automedicação, isto pode estar relacionado ao tamanho restrito da amostra, mas também a variáveis como o tempo decorrido da automedicação até a procura por atendimento, e também a característica sazonal dos sintomas e a evolução não linear desta patologia.

O segundo artigo discutiu a avaliação dos sinais e sintomas por meio de questionários padronizados, como utilizar estes de forma racional e otimizar os resultados dos estudos. O entendimento, é de que, quando bem aplicados, todos os questionários mostraram-se sensíveis e podem ser aplicados, de acordo com o conforto do pesquisados em sentir-se mais apto ao instrumento que mais o agrada.

O terceiro estudo referiu-se ao tratamento cirúrgico por meio da artroscopia, buscando compreender qual a resposta de pacientes refratários a terapias conservadoras. Foram comparadas duas técnicas descritas na literatura. Foi observada uma melhora subjetiva do dor e um ganho funcional limitado, que pode ter sido relacionado ao pequeno intervalo de acompanhamento. As cirurgias minimamente invasivas têm sido uma opção terapêutica dentro de um tratamento complexo envolvendo uma equipe multidisciplinar para pacientes que não respondem a terapias conservadoras. Além disso, a artroscopia é uma ferramenta diagnóstica fundamental para os desarranjos internos da ATM, com a possibilidade de visualizar diretamente as estruturas, classificar e fornecer melhores evidências de tratamento de acordo com o estágio da doença.

No terceiro artigo foram incluídos pacientes com estágios II e III de Wilkes, porém mesmo em condições de agressividade da doença e em pacientes sem tratamento cirúrgico prévio, a artroscopia está indicada. Esta permite a visualização direta do nível de degeneração articular, situação que não pode da mesma forma confirmada por exames complementares como tomografias e ressonância magnética.

A associação de estudos utilizada contribui para a construção de um sistema lógico de conhecimentos que leva ao profissional que tratará estes pacientes a refletir sobre qual o quadro atual que o pacientes se apresenta, quais os mecanismos de avaliação e o tratamento de escolha ou encaminhamento deste paciente.

A tentativa em elaborar estudos que complementem a informação é um desafio. Especialmente para o tema disfunção temporo mandibular, as dificuldades são maiores, pois apesar de existirem muitos estudos na literatura, não há padronização de metodologia e isto dificulta a comparação dos resultados. Também o entendimento sobre a gravidade da patologia é outro desafio. Com isto o emprego de terapias e diversos dispositivos faz com que tenhamos respostas diferentes, em populações diferentes e com interpretações, muitas vezes, diferentes do que poderíamos entender como sucesso/insucesso. Além disto, as avaliações radiológicas não são unanimidade.

Os resultados do primeiro estudo contribuem para a identificar o comportamento dos pacientes frente aos sintomas, a educação em saúde da população e poderá indicar por qual direcionamento deverá caminhar o paciente na busca do profissional mais adequado frente aos primeiros sinais e sintomas da doença.

Outra questão refere-se sobre a forma que os primeiros profissionais procurados pelo paciente e a automedicação contribuíram para o quadro atual da doença (agudo ou crônico/leve ou severo). A automedicação não foi um fator determinante para quadros de DTM severos e este resultado pode estar relacionado as limitações do estudo, ou também pelo fato das DTMs apresentarem ciclos de manifestação, no lugar de um curso linear de evolução de um quadro leve para um quadro severo.

A maior parte dos estudos que apresentam comparação de tratamentos para DTMs utilizam parâmetros funcionais como máxima abertura interincisal e a dor. Uma limitação deste trabalho refere-se a forma simplificada como a dor foi avaliada, todos os capítulos

avaliaram a presença ou ausência deste sintoma. No entanto, é importante verificar a intensidade e frequência com que ocorre. Conti et al. (2001) realizaram um estudo com 59 pacientes com DTM de forma a determinar a precisão e sensibilidade de quatro escalas de dor em relação as mudanças deste sintoma durante o tratamento. Foram utilizados 19 pacientes que apresentavam desordem muscular e 40 desarranjos internos da ATM. Os autores utilizaram os seguintes instrumentos: escala visual analógica, escala numérica, escala verbal e escala de avaliação do comportamento. Foram realizadas duas medidas antes de qualquer tratamento, sete e quinze dias após, e a cada mês durante 6 meses. A melhora mais significativa ocorreu após dois meses, a escala numérica foi a mais precisa e reprodutível. A ausência de um método padrão ouro para medir a dor e as flutuações naturais dos sintomas da DTM podem explicar a variabilidade dos resultados (Conti et al., 2001). No terceiro capítulo desta tese não foi realizada a avaliação por meio de métodos objetivos devido à natureza retrospectiva do estudo, assim foi observada somente o relato de presença ou ausência de dor. No entanto, estudos como este fazem com que se reflita sobre a utilização de um sistema mais padronizado de acompanhamento pós-operatório, não necessariamente para fins de pesquisa, como também para avaliação da evolução do quadro clínico em um tratamento global com acompanhamento a longo prazo.

Diversos estudos procuram investigar a validade e reprodutibilidade dos instrumentos de pesquisa, apesar disso, não foram encontradas publicações que aceitem e utilizem estas modificações. O questionário proposto pela AAOP propôs questões no intuito de selecionar os pacientes e ajudar os clínicos a decidir quais necessitam de uma avaliação mais detalhada (Franco-Micheloni et al., 2014). Mais de duas respostas positivas em um questionário simplificado com 8 questões poderia servir para identificar pacientes com DTM. A versão em português do questionário da AAOP apresenta boa reprodutibilidade e validade para selecionar adolescentes com DTM no Brasil (Franco-Micheloni et al., 2014). A utilização de

instrumento utilizados internacionalmente ajuda na comparação de resultados entre centro de estudo, o questionário proposto pela AAOP parece ser adequado para seleção de pacientes em grandes contingentes populacionais, devido a sua facilidade de aplicação e interpretação. No entanto nenhum instrumento substitui o contato profissional-paciente no processo de diagnóstico por meio da anamnese, avaliação física e exames complementares.

As questões 8 e 10 parecem não colaborar para a seleção de pacientes com DTM. A questão 8 tem a finalidade de investigar a presença de macro-trauma como quedas, acidentes automobilísticos, traumas diretos na maxila ou na mandíbula ou na região craniocervical; enquanto a questão 10 questiona a realização de tratamentos anteriores para DTM. (Manfredi et al., 2001) A natureza ampla dos questionamentos destes itens parece não restringir os pacientes que apresentam DTM, e assim ter contribuição limitada no processo de seleção de pacientes doentes dentre os saudáveis.

Manfredi et al. (2001) realizaram um estudo para avaliar a sensibilidade e especificidade do Questionário para Triagem para Dor Orofacial e DTM, recomendado pela *American Academy of Orofacial Pain*. Foi realizada uma correlação entre as respostas positivas e os achados clínicos da anamnese específica para DTM. As questões 3 e 5 são direcionadas aos sinais dolorosos característicos de DTM como dificuldade e/ou dor a mastigação e fala, e a sensação de cansaço nos maxilares. Estas parecem ser as mais significativas do questionário. Fato que pode estar relacionado as condições oclusais e com a presença de hábitos de ranger ou apertar os dentes. Os autores observaram que o questionário é sensível e correlato para patologias extra-capsulares ou distúrbios miogênicos onde a queixa principal é a dor facial difusa (Manfredi et al., 2001). Em nosso estudo não foi possível estabelecer uma relação direta entre os achados dos instrumentos para avaliação da DTM e os achados clínicos, uma vez que não foi observado em todos os prontuários as informações

sobre a máxima abertura bucal, dor articular e dor à palpação dos músculos da mastigação, além da questão da variabilidade intra-examinadores.

Campos et al. (2014) realizaram um estudo para avaliar a validade e confiabilidade do IAF com 700 mulheres. Os autores identificaram que as questões 4, 8 e 10 não apresentavam consistência interna. Estas questões referem-se aos seguintes sintomas: presença de dor de cabeça, presença de um hábito (apertar ou ranger os dentes, morder o lápis ou lábios, roer unha) e se o paciente se considera uma pessoa tensa ou nervosa. A contribuição destes itens para a "gravidade da disfunção temporomandibular" ainda não tinham sido avaliados. Assim, é difícil estabelecer uma comparação direta entre os resultados obtidos neste estudo e outros estudos que utilizaram IAF. Estas questões não avaliam as alterações anatômica e estruturais relacionados com a função da articulação temporomandibular, como as outras perguntas fazem. A versão reduzida do IAF apresentou validade e reprodutibilidade adequada quando foi utilizado para avaliar uma amostra de mulheres (Campos et al., 2014). Neste estudo o IAF foi utilizado nos Capítulos 1 e 2, este questionário tem sido utilizado como uma ferramenta de seleção dos pacientes com DTM, no entanto classificação dos pacientes de acordo com a gravidade da doença é questionável justamente pela contribuição de aspectos genéricos abordados nas questões 4, 8 e 10. Assim, estudo futuros visando a avaliação da gravidade da doença podem utilizar além da avaliação clínica a versão reduzida do IAF.

Quando o IAF é utilizado para selecionar pacientes com ou sem DTM, são utilizados intervalos de pontuação (scores). Um intervalo de pontuação de 0 a 45 corresponde à ausência de DTM miogênica e a pontuação que varia de 50 a 100 pontos identifica os indivíduos com o distúrbio. O IAF mostrou um elevado grau de precisão no diagnóstico e pode ser empregado para a identificação de portadores de DTM miogênica quando estão sendo avaliadas mulheres (Berni et al., 2015). Este critério foi utilizado no Capítulo 1 desta tese para a seleção dos pacientes.

No tratamento para DTM são estabelecidos alguns princípios fundamentais, são estes: Tratamento multidisciplinar e progressivo, ou seja, utilizar primeiramente modalidades conservadoras. Os objetivos do tratamento são eliminar ou controlar a dor, melhorar a função, prevenir futura dano a ATM e melhorar a qualidade de vida dos pacientes. O tratamento pode ser dividido em três categorias: não invasivo, minimamente invasivo e invasivo (Liu e Steinkeler, 2013). Este entendimento de tratamento consta neste trabalho, uma vez que os pacientes do Capítulo 3 foram primeiramente submetidos a tratamento conservador com placas oclusais e acompanhamento fisioterápico, e devido à ausência de resposta positiva, foram submetidos a tratamento cirúrgico minimamente invasivo. As indicações deste procedimento devem ser baseadas na avaliação clínica e dos exames complementares. Dessa forma, o tratamento deve ser direcionado aos pacientes e não as imagens de radiografias ou de ressonância magnética. Fazer o contrário, resulta na realização de cirurgias desnecessárias (Laskin, 2007).

O tratamento minimamente invasivo consiste em lavagem dos espaços articulares (artrocentese) associado ou não a injeções intra-articulares de diversas substâncias, geralmente no compartimento superior da ATM, geralmente ácido hialurônico e corticosteróides. Outra opção nesta modalidade é a artroscopia. Estas técnicas podem ser usadas para lise e lavagem da ATM, com o objetivo de eliminar o fluido sinovial alterado, melhorar a motricidade e reduzir a dor (Tozoglu et al., 2011). A artroscopia tem sido usada para reduzir os sinais e sintomas dos pacientes com DTM, mas sua efetividade não está totalmente esclarecida (Rigon et al., 2011). Resultado corroborado por este trabalho, em que a maior parte dos pacientes submetidos a artroscopia evoluíram com melhora da dor durante a função. A redução da dor representa uma melhora significativa na qualidade de vida, que pode ser o principal objetivo do tratamento de pacientes com dor crônica (Conti et al., 2001). No entanto, não é possível estabelecer que os resultados positivos encontrados no Capítulo 3

permanecerão a longo prazo, uma vez que a avaliação foi realizada somente nos dois primeiros meses pós-operatórios. Estes pacientes continuam com um acompanhamento sistemático para reavaliação nos períodos de 6 meses, 1 ano, 2 e 3 anos.

González-Garcia et al. (2006) realizaram um estudo retrospectivo para identificar as complicações da cirurgia de artroscopia. Foram analisados 500 pacientes em que foram realizadas artroscopias em 670 ATMs. Todos os pacientes apresentavam desarranjo interno com estágios de Wilkes entre II e V. A taxa de complicação encontrada foi de 1,34%. Quatro pacientes apresentaram paresia do nervo facial, dois pacientes apresentaram perfuração no ouvido externo e um paciente apresentou perda parcial e temporária da acuidade visual no olho do mesmo lado do procedimento, e um caso de lesão do nervo aurículo-temporal.(González-García et al., 2006) . O presente estudo corrobora com estes resultados, uma vez que a pacientes analisados no Capítulo 3 evoluíram sem complicações após a artroscopia.

Nos três capítulos analisados nesta tese foram incluídos pacientes de ambos os gêneros, foi observada a prevalência do gênero feminino como relatado na literatura. Os pacientes do gênero masculino foram mantidos de forma a não limitar o tamanho da amostra, apresentar dados próximos da realidade das características dos pacientes, que apresentam e buscam tratamento para DTM. A inclusão destes indivíduos pode ser um fator confundidor quando se avalia resultado de determinado tratamento uma vez que o papel do estrógeno na modulação da dor não está bem estabelecido. Existem outros fatores como a reposição com hormônio exógeno em pacientes mulheres pós-menopausa e o uso de contraceptivos orais, que parecem aumentar o risco de apresentar DTM em 30% e 20% respectivamente (LeResche et al., 1997). Outro fator que limitou o tamanho da amostra foi a necessidade dos pacientes selecionados serem atendidos pela primeira vez na instituição de ensino (Capítulo 1).

4. CONCLUSÃO

Dentro dos limites dos métodos empregados para estes artigos, podemos concluir:

1. Para a amostra estudada a gravidade da DTM não foi alterada pelo uso da automedicação, porém pode ter influenciado na decisão dos pacientes de adiar a procura por tratamento profissional;
2. Os instrumentos para a seleção de pacientes com DTM mostraram ser semelhantes quanto a sensibilidade das respostas e devem ser utilizados de forma racional e simplificada;
3. A artroscopia independentemente da técnica utilizada melhorou a dor e a abertura bucal dos pacientes no período estudado;

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ANEXO 1

UNIVERSIDADE PAULISTA -
UNIP - VICE-REITORIA DE
PESQUISA E PÓS



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Avaliação Retrospectiva do Diagnóstico e Tratamento de Pacientes com disfunção Temporomandibular

Pesquisador: Gabriel Pastore

Área Temática:

Versão: 1

CAAE: 45748915.9.0000.5512

Instituição Proponente: ASSOCIACAO UNIFICADA PAULISTA DE ENSINO RENOVADO OBJETIVO-

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 1.104.315

Data da Relatoria: 11/06/2015

Apresentação do Projeto:

A apresentação do projeto é adequada, permitindo analisar seus aspectos éticos.

Objetivo da Pesquisa:

O objetivo do estudo transversal é claro e adequado para o projeto.

Avaliação dos Riscos e Benefícios:

O presente projeto não apresenta riscos para o paciente, tendo como benefícios a melhoria da saúde bucal dos sujeitos da pesquisa.

Comentários e Considerações sobre a Pesquisa:

Esta pesquisa trata de um estudo por meio de dados coletados de aproximadamente 150 prontuários de pacientes com desordens temporomandibulares (DTMs) atendidos na clínica odontológica de graduação da Universidade Paulista – Campus Indianópolis. Os resultados serão analisados e os dados tabulados no Microsoft Excel

Considerações sobre os Termos de apresentação obrigatória:

Os termos da apresentação obrigatória estão adequadamente elaborados.

Recomendações:

Nenhuma recomendação.

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PESQUISA E PÓS



Continuação do Parecer: 1.504.315

Conclusões ou Pendências e Lista de Inadequações:

Não existem pendências ou inadequações.

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

Considerações Finais a critério do CEP:

Nada a ser acrescentado.

Ao término da pesquisa é obrigatória a entrega do relatório final.

SAO PAULO, 12 de Junho de 2015

Assinado por:
MENDEL ABRAMOWICZ
(Coordenador)

UNIVERSIDADE PAULISTA -
UNIP - VICE-REITORIA DE
PESQUISA E PÓS



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Avaliação da Prevalência da Automedicação em Pacientes com Disfunção Temporomandibular

Pesquisador: Gabriel Pastore

Área Temática:

Versão: 1

CAAE: 45465315.0.0000.5512

Instituição Proponente: ASSOCIACAO UNIFICADA PAULISTA DE ENSINO RENOVADO OBJETIVO-

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 1.103.925

Data da Relatoria: 11/06/2015

Apresentação do Projeto:

O projeto está bem apresentado, seguindo todas as normas.

Objetivo da Pesquisa:

O objetivo deste estudo é claro e adequado para o projeto. Este estudo visa identificar a prevalência da automedicação e os medicamentos mais usados em pacientes com disfunção temporomandibular (DTM).

Avaliação dos Riscos e Benefícios:

O presente projeto não apresenta riscos para os indivíduos estudados, tendo como benefícios a elaboração de campanhas de educação em saúde e orientação dos pacientes quanto aos sinais e sintomas desta condição.

Comentários e Considerações sobre a Pesquisa:

Esta pesquisa realizará um estudo prospectivo cujos integrantes serão os alunos do 4º ano de graduação supervisionadas pelos professores da área de Cirurgia Bucomaxilofacial. Os indivíduos pesquisados (pacientes) preencherão um questionário onde responderão 6 questões e logo os mesmos serão avaliados clinicamente por um pesquisador, de acordo com o critério de diagnóstico clínico de DTM. A pesquisa será realizada durante as clínicas de graduação de disfunção temporomandibular, do Curso de Odontologia da Universidade Paulista- Campus

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Continuação do Parecer: 1.103.925

Indianópolis da UNIP – SP.

Considerações sobre os Termos de apresentação obrigatória:

Os termos da apresentação obrigatória estão adequadamente elaborados.

Recomendações:

Nenhuma recomendação.

Conclusões ou Pendências e Lista de Inadequações:

Não existem pendências ou inadequações.

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

Considerações Finais a critério do CEP:

Nada a ser acrescentado.

SAO PAULO, 11 de Junho de 2015

Assinado por:
MENDEL ABRAMOWICZ
(Coordenador)