

The TAD World!



Temporary anchorage devices (TADs) are no longer an emerging trend today; they are an established orthodontic regimen in both cerebral spaces and dexterous domains! I remember an incident narrated by a renowned orthodontic professor at an orthodontic meeting a few years ago. He said, “Nowadays, before my residents discuss a treatment plan with me, I first ask them-Tell me how will you treat this patient without TADs?” Thought provoking indeed! TADs have made treatment plans that were previously unthinkable, today’s reality! The philosophy behind skeletal anchorage is that if reactive forces can be absorbed by skeletal structures, tooth movements can accomplish the desired therapeutic goals, and the undesirable reactive side effects can be prevented entirely.^[1]

The “TAD-Fad” has stimulated a newer thinking in biomechanical designs, understanding of the envelopes of discrepancies that could be addressed, and clinical creativity on both podiums and in published literature!^[2] At the turn of the decade, I actually thought - what more about mini screws can I really learn now. Have we plateaued in terms of scholarly literature and in the enthusiasm among clinicians practicing this modality?

We decided to evaluate TAD trends in contemporary published literature. An evaluation of five orthodontic journals for the last 6 years (American Journal of Orthodontics and Orthopedics [AJODO], Journal of Clinical Orthodontics [JCO], European Journal of Orthodontics [EJO], Angle Orthodontics [AO], and Orthodontic and Craniofacial Research Journal [OCRJ]) was carried out. To establish a set of comparable data, the method adopted by Kanavakis *et al.*^[3] was followed.

The online web edition of the journals was assessed. We considered articles published from January 2011 to June 2017. All published articles, editorials, and opinions were considered for the evaluation. The examination of the association of the parameters: “type of article,” “main affiliation,” “origin,” and “keywords” across journals was performed. The main keywords used in the selection of the articles were “temporary anchorage devices (TADs),” “mini-plates,” “miniscrews,” and “microscrews.” There were in all five reviewers who decided on the selection of the article. In the case of a difference of opinion on the topic category, the article was categorized by a vote among the panel.

All this data were evaluated for four parameters:

1. A total number of articles published in all the journals
2. A total number of articles published individually on TADs in each journal
3. Type of articles published on TADs in the hierarchy of evidence
4. Overall percentage of articles on TADs in comparison to all publications.

In all, there were 4299 articles evaluated (combined in all the five journals) with 1902 articles published in AJODO, 912 in AO, 592 in JCO, 698 in EJO, and 195 in OCRJ from January 2011 to June 2017. The total number of articles published on TADs in all the journals was 394 (combined in all the five journals), with 170 articles published in AJODO, 92 in AO, 74 in JCO, 54 in EJO, and 5 in OCRJ [Table 1].

We then considered each journal individually for the hierarchy of evidence. Out of the 394 (combined in all the five journals) articles published on TADs, 14 articles were systematic reviews or meta-analysis, 25 were randomized clinical trials, 128 were cohort studies, 183 were case reports or case series, and 44 were GOBSAT (opinions/editorials/expert perspectives).

In the AJODO, out of 170 articles in total on TADs, five articles were systematic reviews or meta-analysis, 8 were randomized clinical trials, 52 were cohort studies, 88 were case reports or case series, and 17 were categorized as GOBSAT.

Table 1: Details of Articles published on TADs in the 5 journals

Journal	Total number of articles published	Total number of articles published on “TADs”	Percentage of articles on “TADs”
AJODO	1902	170	8.9
Angle orthodontist	912	92	10.0
EJO	698	54	7.7
JCO	592	74	12.5
OCRJ	195	5	2.6

AJODO – American Journal of Orthodontics and Orthopedics; EJO – European Journal of Orthodontics; JCO – Journal of Clinical Orthodontics; OCRJ – Orthodontic and Craniofacial Research Journal; TADs – Temporary anchorage devices

In the Angle Orthodontist, out of a total of 92 articles, 4 articles were systematic reviews or meta-analysis, 12 were randomized clinical trials, 38 were cohort studies, 31 were case reports or case series, and 7 were GOBSAT.

In the EJO, out of 54 articles, 3 articles were systematic reviews or meta-analysis, 4 were randomized clinical trials, 28 were cohort studies, 16 were case reports or case series, and 2 were GOBSAT.

In the JCO, out of 74 articles, 1 article was a systematic review or a meta-analysis, there were no randomized clinical trials, 8 were cohort studies, 47 were case reports or case series, and 18 were GOBSAT.

In the OCRJ, out of 5 articles, there was one systematic review or meta-analysis, one randomized clinical trial, two cohort studies, one case report or case series, and no GOBSAT [Table 2].

So has information on TADs plateaued? By no means! The “TAD World” is growing exponentially, more in terms of

clinical applications/innovations, and slowly but surely in terms of evidence on these applications!

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Table 2: Level of Evidence in Published Literature about TADs

Journal	Systematic review/ meta-analysis	RCTs	Cohort studies	Case reports/ case series	GOBSAT
AJODO	5	8	52	88	17
Angle orthodontist	4	12	38	31	7
EJO	3	4	28	16	2
JCO	1	0	8	47	18
OCRJ	1	1	2	1	0

RCTs – Randomized controlled trials; AJODO – American Journal of Orthodontics and Orthopedics; EJO – European Journal of Orthodontics; JCO – Journal of Clinical Orthodontics; OCRJ – Orthodontic and Craniofacial Research Journal

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