FEATURE ARTICLE

PRACTICAL IMPLEMENTATION OF EVIDENCE-BASED DENTISTRY INTO DAILY DENTAL PRACTICE THROUGH A SHORT TIME DEPENDENT SEARCHING METHOD

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ABSTRACT

Introduction

Despite the fact that the benefits of implementation of Evidence-Based Dentistry (EBD) into clinical practice is increasingly being highlighted, there are still clear limitations in its implementation into daily dental practice. One potentially important barrier to effective implementation into practice is the perception of EBD as a time-consuming process. The aim of the present study is to increase the familiarity of dental practitioners with the benefits of different time-dependent 'practical' search strategies important to EBD using a clinical question from the field of dental implantology as an example.

Materials and Methods

The PICO (population, intervention, comparison, outcome) question used in this study was: "In young adults with anterior single-tooth implant what is the effect of immediate or delayed loading on success?" A bibliographic search according to the Haynes 5S pyramid, together with 3 different time-dependent strategies (5-min, 30-min and more than 60-min), were applied.

Results

Both the Haynes 5S Pyramid and time-dependent search strategies revealed promising results for enhancing decision-making for determining the feasibility of immediate or conventional loading of anterior single dental implants. Results clearly showed that selection of the loading protocol would be case (patient)-specific and also indicated high primary implant stability and bone quality as the most important prerequisites for a successful immediate/early loading. From among the 3 different time-dependent strategies (5 min, 30 min and more than 60 min), the 60+ min search results were quite comparable with the Haynes pyramid search results.

Conclusion

It is likely that the different time-dependent search strategies may have the potential to support the clinical decision making process and may improve the implementation of EBD into daily dental practice. Increased time spent searching

naturally seems to increase the extent of this support. However, even with short time-dependent searches, busy dental clinicians may get an improved idea/opinion regarding a clinical question.

INTRODUCTION

The therapeutic decision for some clinical cases is a complex process which depends on many important factors but the scientific basis is indispensable. This decision is the mainstay of patient care.[1] Evidence-Based Dentistry (EBD) is a tool that helps clinicians with such important decisions. The foundation for evidence-based practice was laid out by David Sackett who defined it as "integrating individual clinical expertise with the best available external clinical evidence from systematic research."[2,3] Applying Evidence-Based Medicine principles to dentistry, the American Dental Association defined the term Evidence-Based Dentistry as: "an approach to oral health-care decision-making that requires the judicious integration of systematic assessment of clinically relevant scientific evidence relating to the patient's oral and medical conditions and history, together with the dentist's clinical expertise and the patient's treatment needs and preferences."[4–6]

The importance of EBD use lies in the possibility of having guidelines to help the clinician make an intelligent decision. In essence, EBD does not give definitive answers; it does not exchange the totalitarianism of the expert for the totalitarianism of the literature. As stated in Sackett's definition, EBD depends first on the clinical expertise of the practitioner. This expertise is critical in the field of dentistry where we have not been able to do a significant number of randomized, controlled clinical trials and prospective studies. If there were a reliable number of qualified prospective studies, it would be possible to retrieve a well-performed meta-analysis or systematic review of the evidence on any clinical question related to dentistry to clarify each problem. But there aren't enough studies to validate some clinical decisions and, therefore, clinicians must apply the best available evidence to make a decision.[2]

Since the 1980s an evidence-based approach to clinical education has been applied in medicine (Evidence Based Medicine – EBM) at McMaster University, Ontario, Canada. It takes a systematic approach to summarizing the large volume of literature that health care providers need to assimilate into their practices. This concept soon expanded to other clinical areas and in dentistry this model was adopted later. The goal of the international non-profit organization, the Cochrane Collaboration, is to produce accurate and up-to-date information available worldwide on the effects of health care, and has an Oral Health Group that has produced a lot of systematic reviews. Their web site http://hiru.mcmaster.ca/cochrane/default/htm[1,2,4,7–9] is one of the best places to consult the best evidence and help to make a clinical decision. A tour through the Cochrane Collaboration, which is medicine's EBM system, shows that most systematic reviews involved drugs with therapeutic interventions that introduce small changes from one setting to another or one practitioner to another. The "best evidence" standard does not address representative sampling in research studies to ensure that studies are conducted under conditions resembling those of dental practice, or in the range of dental practices that exist.[10,11]

Knowing how to use the best scientific evidence in clinical practice is not easy and must be a fundamental skill of the dentist. Many clinicians are familiar with PubMed (www.ncbi.nlm.nih.gov/pubmed). This database is the premier source for information on journal papers in the biomedical sciences. Only some of them are relevant studies to answer therapeutic questions and few are systematic reviews, which can be used in clinical practice directly. To improve searches there are strategies to obtain relevant papers. Moreover, there often are preferable strategies leading to EBD resources that process and appraise the evidence, thus facilitating its use in clinical practice.[12]

Among the various questions that clinicians can raise during their practice, one related to dental implants can be used as an example to build a practical case on where to apply EBD.

Clinical Practice Problem

The anterior aesthetic zone is a particular area where aesthetics and especially the long waiting time for osseointegration has become a real challenge for practitioners (Figure 1). To further shorten treatment time, special emphasis has been placed on immediate implant placement in fresh sockets.[13–15] In addition to different loading protocols, different patterns of occlusal contact have also been proposed.[13–21] Although clinicians may be familiar with the rationales for different loading models, they still may experience difficulties in making their own decisions in daily dental practice especially in complex cases in the aesthetic zone. At this point, EBD may serve as a tool to support them in making reliable decisions. However, implementation of EBD into daily practice does not seem to be at the desired level and the perceived barriers by individual dentists may be of particular importance. Among the various other barriers (e.g. limited awareness and knowledge, and lack of financial incentives) a recent study has identified 'lack of time' as an important barrier to implementation of EBD into daily dental practice.[22] Thus, it might be assumed that there may be a potential for different time-dependent and less 'time consuming' search strategies to support 'busy' clinicians in overcoming the 'lack of time' barrier and improve the clinical decision-making process. Thus, the aim of the present study – based on a dental implantology-related clinical