



Clinical dental research, case series, and case reports



We would like to believe that dentistry is based on evidence, as well as extensive and controlled studies. In other words, we hope that the treatment with which we provide our patients is proven to be safe and effective.

Peer-reviewed dental literature is crucial in building and fortifying the knowledge base. Like medicine, however, dentistry is not an exact science. Colleagues often mention that a procedure or compound is working well in their hands, while others note that they were more successful with other procedures. The term "in my hands" adds a subjective and unpredictable variable and limits the effort to make dentistry an evidence-based discipline. In fact, this is one of the biggest obstacles in clinical dental research.

The knowledge and information gathered in dental literature can be categorized in several layers.

The basic form of communication in the literature is reporting a case. A well-written report that can describe and document a treatment outcome or rare condition can be a wonderful source of information. However, we often receive case reports that end with a conclusion, which, in my opinion, cannot be drawn from a single case. This does not lessen the importance of a case report: A single case can enlighten a topic, novel technique, or pathology, but it cannot provide a conclusion. A report of such a case can definitely encourage conducting controlled studies that may lead to real innovative conclusions. The process may start with a case but cannot be concluded by one.

The next layer of information is a report of case series. Several cases can suggest a trend; moreover, carefully evaluated cases can shed light on differences among groups of patients or various treatments. Prior to full-scale clinical research, laboratory (in vitro) studies or pilot (feasibility) studies should be performed. Pilot studies can serve as precursors for a large study by testing methods and gathering information prior to the full-scale study. We occasionally receive studies for publication that authors describe as pilot studies. For the most part, pilot studies should not be published. However, pilot study findings are sometimes fascinating and authors believe that they should be shared with the com-

munity. This is possible only if the limitations of the study are clearly explained. Moreover, the term "a pilot study" should not be used in regard to problems in the study design.

Laboratory tests are an essential step in research and particularly in the development of dental materials. The laboratory environment allows testing compounds in the exact conditions and allows adequate comparison. Conversely, the evaluation of the actual clinical outcome is more complicated: Several unpredictable variables are involved. Differences include biological factors of the patients, the process in the dental laboratory, and technicians' skills. Furthermore, the operators' skills are not identical and a clinician's capabilities may vary on different days.

In a forthcoming editorial, we will discuss clinical research and hopefully provide some important tips for overcoming these obstacles. It is important to note that in medicine and dentistry, a long time is required before a new treatment is reliable. This progress depends chiefly on information obtained from dental and medical literature over the years. An example is the development of dental implants from the discovery of osteo-integration in rabbits in the early 1950s to the first clinical experiments in the 1960s to an approved and commercially distributed product in the 1980s. Today, we cannot think about dentistry without implants.

All layers of information in the literature contribute to the progress of dentistry, as long as the limitations of the publication are known, while at the same time assuming that conclusions too rashly made may be harmful and irresponsible. *Quintessence International* welcomes case reports, case series, in vitro studies, and definitely full-scale clinical research. These reports, however, must be noteworthy and clinically relevant, and the reader must be able to benefit from reading them.

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