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Medicine based on evidences

Medicina baseada em evidências

Continuing uptading was always an important requisite for a good exercise in medicine. Nevertheless, with the technological development and the great increase in options for diagnosis and treatment, it is also necessary to know how to recognize the best evidences and critically interpret them[1].

There are several knowledge available resources in the medical environment: individual communications, courses and congresses, text-books, pharmaceutical industry advertising, journals (scientific or non-scientific), internet, etc. There are many ways to get available information and the modern doctor do not need to move away to update. In that context of continued flow of information, challenge now is no more how to access but how to measure the quality of the received information.

In many occasions, the acquired knowledge may not reflect the best clinical practice, like, for instance, individual communications can be subject to limitations of the clinical experience of the doctors; lectures in courses or congresses only generally show diagnostic and therapeutic options and do not accurately describe how and how often the results could be reproduced by other professionals; text-books could be obsolete; laboratory advertisement could be biased due to conflict of interests; and many scientific articles published in journals do not show methodology accuracy[2,3].

Thus, the importance of strategy in "Medicine Based on Evidence (MBE)" increases progressively. MBE was developed in Canada in 1980, defined as conscious, explicit and appropriate use of the best evidence available in literature in order to show that treatments and options should be offered and discussed with the patients. Applying MBE one could associate the clinical experience acquired by medical practice with the best available evidences, considering the reality and circumstances of the patient. Those evidences should emerge from clinic researches, found by means of search in the literature of relevant articles and adequate methodology. To practice based on evidences is to associate the best discoveries of the scientific research to the experience of the doctor[4-6].

The first step consists of directing the bibliography research to answer a clinic question. It is thus necessary to accurately structure the question, which should have, in general, four elements: population, intervention, comparison and conclusion. One needs therefore to 1- describe a group of individuals similar to the patient who is being treated; 2- define the intervention or the treatment to be evaluated; 3- specify with what one desires to compare the evaluated intervention (it could be with another modality of an efficacy treatment already proved for this medical condition or with a placebo); 4- choose the conclusion one desires to analyze in patients exposed to that intervention. For example, is the cataract surgery with apodized multifocal intraocular lenses in comparison with diffractive multifocal lenses more efficient in improving the sensibility to contrast?[7]. Another option depending on how a clinic question was made is to focus the evidence to respond to different clinic aspects. For instance, in patients blind by cataract, is it possible that mistaken perceptions toward the disease and the possibility of cure influence in the search for treatment?[8]. Its wrong to use wide-open questions like: Are intraocular lenses efficient to improve the sensibility to contrast? Or what are the causes of the barriers to access to cataract surgery? Adequate structure of the doubt to be answered is important to create the key words that will lead to the bibliography search on the internet and will help to choose the pertinent articles.

The following step is the critical analysis of the selected articles, which has the objective of ensuring that the studied population would show similar characteristics, that the intervention (diagnosis exam or treatment

modality) would be similar to what one desires to perform, that the methodology used in getting the results would be trustable (with no important biases) and that the conclusions would be only based on the evaluated data. And the critical analysis of the literature which will show if the results of the study are valid and significant and if they could be applied to our clinic practice.

An option to save the time spent in the selection and the critical evaluation of the clinic studies is to search for revision and metanalysis articles published in journals of good quality (good Factor of Impact), where scientific articles were already commented and critically evaluated[9]. The systematic revision is a type of study that responds to a clearly formulated question, putting together the results of several original studies. Metaanalysis is the statistic method utilized to combine and analyse the results of several original studies that respond to a specific question in an homogenious manner, by using the same population, administering the intervention in a similar manner, measuring the results in the same way and utilizing the same methodology for designing research.

Concluding, the practice of medicine based on evidences include the definition of a problem, the search and evaluation of available evidences and implementation of the conclusions in practice, always bearing in mind the clinic experience of the doctor.

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References

1. KARA-JUNIOR, Newton. **O valor da análise crítica da literatura para a atualização médica continuada.** *Rev. bras.oftalmol.* [online]. 2013, vol.72, n.3, pp. 155-156. ISSN 0034-7280.
2. CHAMON, Wallace. **Plágio e condutas inadequadas em pesquisa: onde chegamos e o que podemos fazer.** *Arq. Bras. Oftalmol.* [online]. 2013, vol.76, n.6, pp. V-VI. ISSN 0004-2749.
3. CHAMON, Wallace. **Paixão, publicação, promoção e pagamento: quais "Ps" motivam os cientistas?.** *Arq. Bras. Oftalmol.* [online]. 2012, vol.75, n.6, pp. 381-382. ISSN 0004-2749.
4. José FF; Leitão Filho FSS. Introdução à medicina baseada em evidências.In: José FF; Leitão Filho FSS; Menezes IBS. Gestão do conhecimento médico. São Paulo: Artmed; 2009. p.382-387.
5. Rosenberg W; Donald A. Evidence based medicine: an approach to clinical problem-solving. BMJ. 1995;310(6987):1122-6.
6. Drummond JP. Introdução. In: Drummond JP, Silva E. Medicina baseada em evidências: novo paradigma assistencial e pedagógico. São Paulo: Atheneu; 1998. p.XI-XII.
7. Santhiago MR; NETTO MV ; BARRETO jr J ;et al. A contralateral eye study comparing apodized diffrative and full difrative lenses: wavefront analysis and distance and near uncorrected visual acuity. Clinics (USP. Impresso), v. 64, p. 953-60, 2009
8. Temporini ER; et al. Popular beliefs regarding the treatment of senile cataract.. Revista de Saúde Pública, v. 36, n.3, p. 343-349, 2002.
9. CHAMON, Wallace and MELO JR, Luiz Alberto Soares. **Fator de impacto e inserção do ABO na literatura científica mundial.** *Arq. Bras. Oftalmol.* [online]. 2011, vol.74, n.4, pp. 241-242. ISSN 0004-2749.