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## **Young GI Angle: How to Approach Evidence-based Medicine**

### ***Junior perspective: Leonardo H. Eusebi***

During our daily practice, we are continuously taking decisions regarding our patients. Occasionally, difficult cases make us question whether we are providing the optimal service, prescribing the correct treatment, or managing the disease appropriately. This is especially evident in the earlier phases of medical careers, when it is understandable to have uncertainties, and to not be in possession of the answers to all the clinical challenges one encounters. An evidence-based approach is crucial to address these challenges in the best of manners as it helps to find the answers we need. Moreover, evidence-based medicine (EBM) ensures that our clinical practice is founded on up-to-date scientific evidence, and that we achieve standardization and adoption of best treatment practices, allowing more efficient and safer outcomes for our patients.

Asking the right clinical question is the first step, when using an EBM approach, to find the correct answer you are looking for. Thus, one must first learn to formulate clinical questions to become answerable in a scientific way, using for example the PICO format, which considers: identification of your target patient or problem (P), defining the intervention (I), evaluating the comparison approach (C), and establishing the outcome (O).

Following this format also helps to identify “keywords” to use in the next steps; searching, discriminating, and retrieving the best evidence to answer your queries. To do so, firstly a good search strategy needs to be designed, by applying for example MESH terms, filters or Boolean operators, in order to identify the most relevant literature. Secondly, the search needs to be conducted on appropriate platforms. Several on-line databases are now widely available, such as Medline, Up-to-date or Embase. Knowing the differences between each search engine helps one to choose the most appropriate tool for the job. The more accurate the search strategy, the greater are the chances of finding the relevant evidence. However, if the search is too restrictive, it is possible to miss important information.

Often, a literature search will identify many different types of articles on the topic of interest, from observational studies to randomized controlled trials or systematic reviews. Therefore, the third step is to understand the hierarchy of medical evidence, in order to be able to critically appraise the search results. Unfortunately, not all published research is backed by convincing scientific data, which is why developing skills in critical appraisal is important in order to discriminate high quality evidence from poor-quality research. In this context, it is important to approach the studies one encounters in an unbiased manner, ensuring that your previous experience and convictions do not influence your decisions. To do so, compare data deriving from different authors and not just from a single research centre, consider the hierarchy of evidence when examining different types of study designs, and develop your statistical knowledge to correctly interpret the published data.

The last step is to decide how to incorporate the collected findings into your daily clinical practice. Modifying and reconstructing your own convictions and those of others, and applying changes to your clinical practice may be challenging. However, by integrating the best available evidence with your clinical expertise, you will be able to make decisions resulting in a more appropriate management of your patients.

Finally, our knowledge of current best practice slowly but constantly decreases every year after graduation. Most of the senior doctors support their choice of practice as a result of years of experience and observation, which is no longer based on the up-to-date evidence. Therefore, do not underestimate this time-effect and continue updating and refreshing your knowledge.

### ***Senior Perspective: Alexander C. Ford***

It seems that the longer I spend as a senior Gastroenterologist with a specialist area of interest, the more and more I know about less and less. This problem is exacerbated by the rapid expansion in science and technology in medicine, in terms of both diagnostics and treatment. This has led to a burgeoning medical literature, which it is almost impossible for the average doctor, with a busy clinical job, to keep up to date with. The number of active, publishing, researchers increases by almost 5% each year, with approximately 2.5 million scientific papers published annually, and it is estimated that global scientific output doubles every 8 to 9 years.

As a young trainee, admitting that one doesn't know the answer to a clinical question in daily practice is difficult. However, given all of the above, doctors should never be ashamed to admit that they are not omniscient, and that they don't know the answer to a clinical problem. Instead, they should empower themselves by being in possession of the skills that will enable them to do their very best to find out the answer, as efficiently as possible.

The principles of EBM were laid down by its founding father, David Sackett, and include "the conscientious and judicious use of current best evidence from clinical care research in the management of individual patients". When these principles are applied correctly, they allow a framework for the rapid identification of relevant, well-designed, clinical studies. These will hopefully provide high quality, unbiased results, which can then be applied to the clinical problem encountered.

However, EBM is not a panacea. Firstly, it is important to realise that the results of a potentially relevant research article, but which is conducted in a highly selected group of patients in another country, may not be applicable to the individual patient you are caring for. Secondly, even if the results are applicable, there may be other considerations to take into account, including the preferences or beliefs of the individual patient, and the cost or potential adverse effects of the intervention. Thirdly, there is insufficient high quality

evidence published to address many clinical questions, and in these cases doctors still have to fall back on clinical experience and judgement. Finally, EBM principles focus on the results of meta-analyses and randomised controlled trials (RCTs). However, because clinical trials are expensive to conduct, and therefore rarely funded by government bodies or research charities, this means the research agenda in this field tends to be driven by pharmaceutical companies, which represents a potential conflict of interest. In addition, this focus on evidence from the synthesis of RCTs, or the results of individual clinical trials, does not address the fact that some clinical questions cannot be answered by these particular study designs.

Applying EBM in your day-to-day practice is not difficult. Accept that there are unanswered questions everywhere in clinical practice. Note down the ones that you think are important, or that pique your interest, and make an effort to seek out the best evidence that addresses each, in a free moment. Brief, targeted training, as discussed above, will help you design your question, in order to frame it in a more answerable format, as well as becoming adept at searching the medical literature quickly, in order to find the pertinent published studies. Critical appraisal of other people's research is, perhaps, a harder skill to acquire, but setting up a journal club in your unit, with input from a senior clinician, can help you become familiar with dissecting scientific articles, in order to understand both the strengths and the weaknesses. Finally, knowing the best evidence that addresses your original question is not enough. This information needs to be cascaded to other individuals in your unit, so that best practice is adopted by all team members. This is known as change management, and can be achieved through grand round meetings, where clinical cases are reviewed, morbidity and mortality meetings, and the development of local guidelines.

Numerous courses are available, both online and face-to-face, that enable the acquisition of such skills. The Evidence-Based Medicine Course, which is run under the auspices of UEG, deals with all of these aspects of EBM during a weekend of interactive, face-to-face teaching. The skills acquired from such training can assist you in a lifetime of posing and answering clinical questions, using the best available evidence, in order to have a positive impact on the patients that you care for.

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