Evidence Based Medicine

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Contents

• EBM (evidenced based medicine)

• GRADE methodology for practice recommendations (2015 CPR GUIDELINES)
What is EBM?

Why we need EBM?

EBM means:

“the integration of best research evidence with clinical expertise and patient values to achieve the best possible patient management”
EBM

- Distinguish between **fact** and **opinion** properly decide whether or not to accept the results of articles after evaluating their methodology

- Practically make use of evidence provided by studies

**EBM: What is it?**

- It is a **skillful** approach to health care practice in which the clinician is **aware of the evidence that bears on her / his clinical practice** and the **strength of that evidence.**
Evidence-based medicine

- the process of life-long self-directed learning in which caring for patients leads to the search for, critical appraisal, and incorporation into practice of valid and clinically important information about diagnosis, prognosis, therapy, and other clinical and health-care issues.

IS IT NEW?

الرازي أول من دعا إليه في القرن التاسع الميلادي (865 – 915) حين قال "إنه ما أجمع عليه الأطباء وشهد عليه القياس وأيده التجربة"
Requirements of new treatment

- The drug must have a defined mode of action
- It must be tested on a well defined disease
- The time of action must be observed
- The effect of the drug must be seen to occur constantly in many cases
- The experimentation must be done with the human body for testing a drug on a lion or a horse might not prove anything about its effect on man

Ibn Sina 981-1037
When did EBM begin?

- Dr. Archie Cochrane

(British epidemiologist and a leading EBM theoretician, estimated a decade ago that only 15-20% of all medical practice is based on scientific, statistically sound research.

- Dr. David Sackett
WHY WE NEED EBM?

The Problems: Needs

1. We need evidence (about the accuracy of diagnostic tests, the power of prognostic markers, the comparative efficacy and safety of interventions, etc.)
Why Evidence Based Health Care?

- Too many patients
- Too many problems
- Too many journals
- Information overload
- CME getting big and huge
- No time to read, performance deteriorates..
- Read what I am familiar with
- Avoid difficult issues

The Needs

- We need to know whether conclusions of systematic reviews are valid and whether recommendations in guidelines are sound.
STEPS of EBM(5As)

1. **Ask**: Formulate a clear clinical question from a patient’s problem
2. **Acquire**: search the literature for relevant articles
3. **Appraise**: evaluate (critically appraise) the evidence for its validity and usefulness (a lot of methods including GRADE)
4. **Apply**: Implement useful findings in clinical practice
5. **Asses.**
GRADE METHODOLOGY

System for rating the quality of a body of evidence in systematic reviews and other evidence syntheses, such as health technology assessments, and guidelines and grading recommendations in health care.

GRADE METHODOLOGY

...can be used to develop clinical practice guidelines (CPG) and other health care recommendations (e.g. in public health, health policy and systems and coverage decisions).
GRADE METHODOLOGY

provides a framework for specifying health care questions, choosing outcomes of interest and rating their importance, evaluating the available evidence, and bringing together the evidence with considerations of values and preferences of patients and society to arrive at recommendations.
GRADE METHODOLOGY

GRADE approach begins by defining the health care question in terms of the population of interest, the alternative management strategies (intervention and comparator), and all patient-important outcomes.

(PICO FORMATE)
### Grade Practice Recommendations

**Table 1**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Descriptor</th>
<th>Quality of evidence</th>
<th>Implications for practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Strong recommendation</td>
<td>Level I evidence or consistent findings from multiple studies of levels II, III, or IV</td>
<td>Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present</td>
</tr>
<tr>
<td>B</td>
<td>Recommendation</td>
<td>Levels II, III, or IV evidence and findings are generally consistent</td>
<td>Generally, clinicians should follow a recommendation but should remain alert to new information and sensitive to patient preferences</td>
</tr>
<tr>
<td>C</td>
<td>Option</td>
<td>Levels II, III, or IV evidence, but findings are inconsistent</td>
<td>Clinicians should be flexible in their decision-making regarding appropriate practice, although they may set bounds on alternatives; patient preference should have a substantial influencing role</td>
</tr>
<tr>
<td>D</td>
<td>Option</td>
<td>Level V evidence</td>
<td>Little or no systematic empirical evidence; Clinicians should consider all options in their decision making and be alert to new published evidence that clarifies the balance of benefit versus harm; patient preference should have a substantial influencing role</td>
</tr>
</tbody>
</table>

### Types of health care professional

- **Evidence generator**
- **Evidence Finders**
- **Evidence Users**
- **Evidence Ignorer**
In summary

Advantages of GRADE SYSTEM

- Developed by a widely representative group of international guideline developers
- Clear separation between judging confidence in the effect estimates and strength of recommendations
- Explicit evaluation of the importance of outcomes of alternative management strategies
- Explicit, comprehensive criteria for downgrading and upgrading quality of evidence ratings
- Transparent process of moving from evidence to recommendations
- Explicit acknowledgment of values and preferences
- Clear, pragmatic interpretation of strong versus weak recommendations for clinicians, patients, and policy makers
- Useful for systematic reviews and health technology assessments, as well as guidelines
EB CPG

- Practical steps of implementation of CPG starting with proper selection, then appraisal, adaptation and later implementation.

THANKS