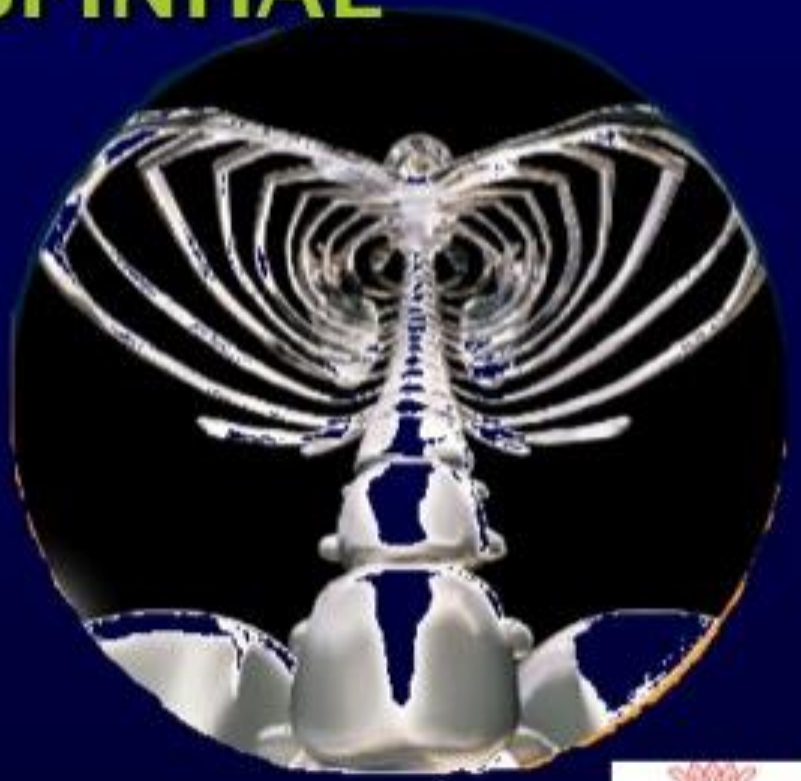
XI CONGRESSO DE CIRURGIA ESPINHAL

Toracoscopia e Minitoracotomia o que a literatura suporta



Marcelo Luis Mudo

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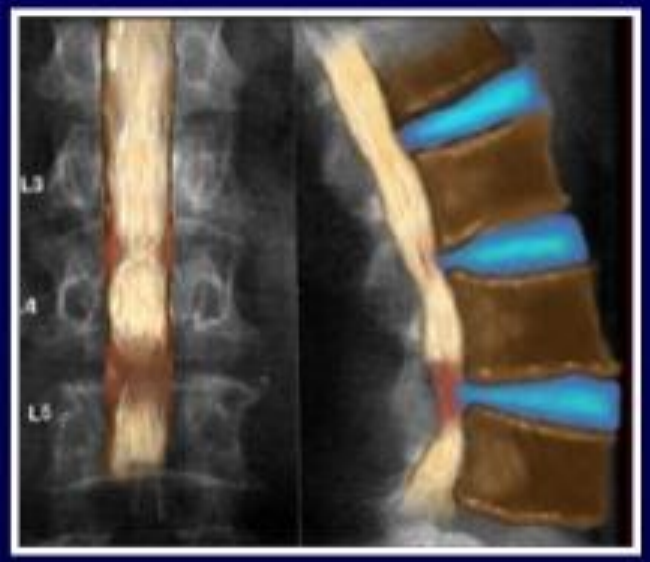
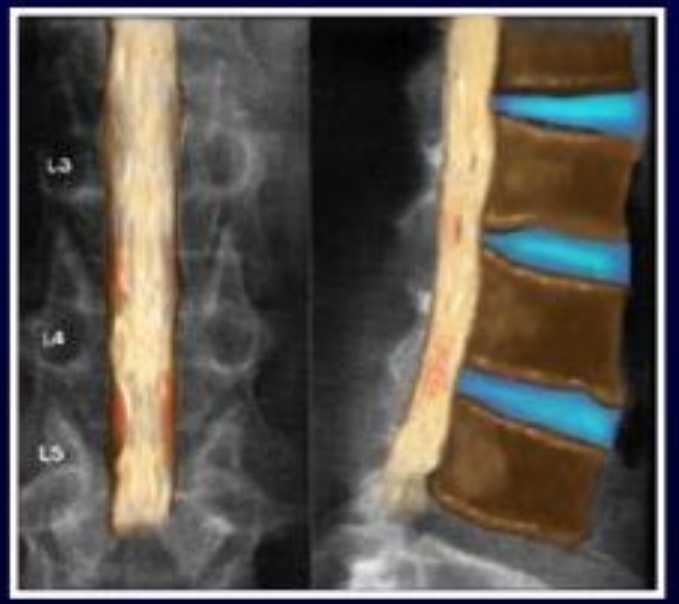
SÃO CAMILO

Evidências





Origens

- A Medicina baseada em evidências surge da integração de três disciplinas para gerar um suporte à decisão clínica:
  - Epidemiologia Clínica
  - Bioestatística
  - Informática Médica

Paradigmas

- Aceita a incerteza nas decisões clínicas e reconhece que as ações no manejo dos pacientes são freqüentemente adotadas sem o conhecimento sobre seu real impacto.
- Reconhece que a experiência clínica e os conhecimentos sobre mecanismos, apesar de necessários, são insuficientes para reduzir a incerteza das decisões clínicas.

Paradigmas

- Busca evidências de pesquisas (clínicas ou epidemiológicas) planejadas para conter dados que respondam às incertezas das decisões clínicas.
- Integra a evidência com o entendimento atual sobre os mecanismos de doenças e com as experiências clínicas pessoais.

MEDICINA BASEADA EM EVIDÊNCIAS

O QUE É

É o uso consciencioso, explícito e judicioso da melhor **evidência** disponível na tomada de decisão acerca dos cuidados clínicos para os pacientes individuais.

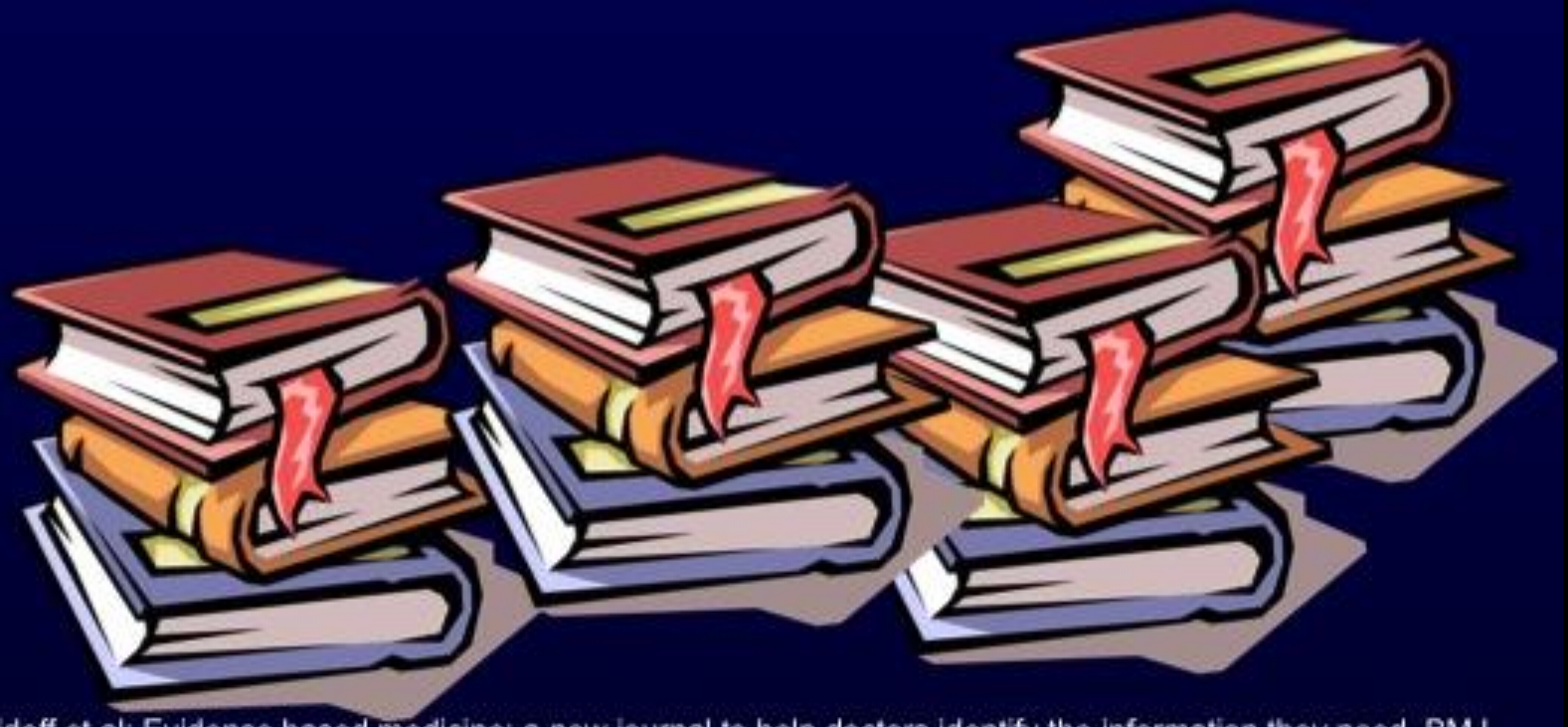
Avalanche de informações

17.000 novos livros
30.000 revistas biomédicas
2 milhões de artigos científicos

MEDLINE – > 4.000 revistas

LILACS – 670 revistas

Médicos generalistas, para conhecerem o que de interesse é publicado em revistas, teriam que examinar 19 artigos/dia durante 365 dias do ano

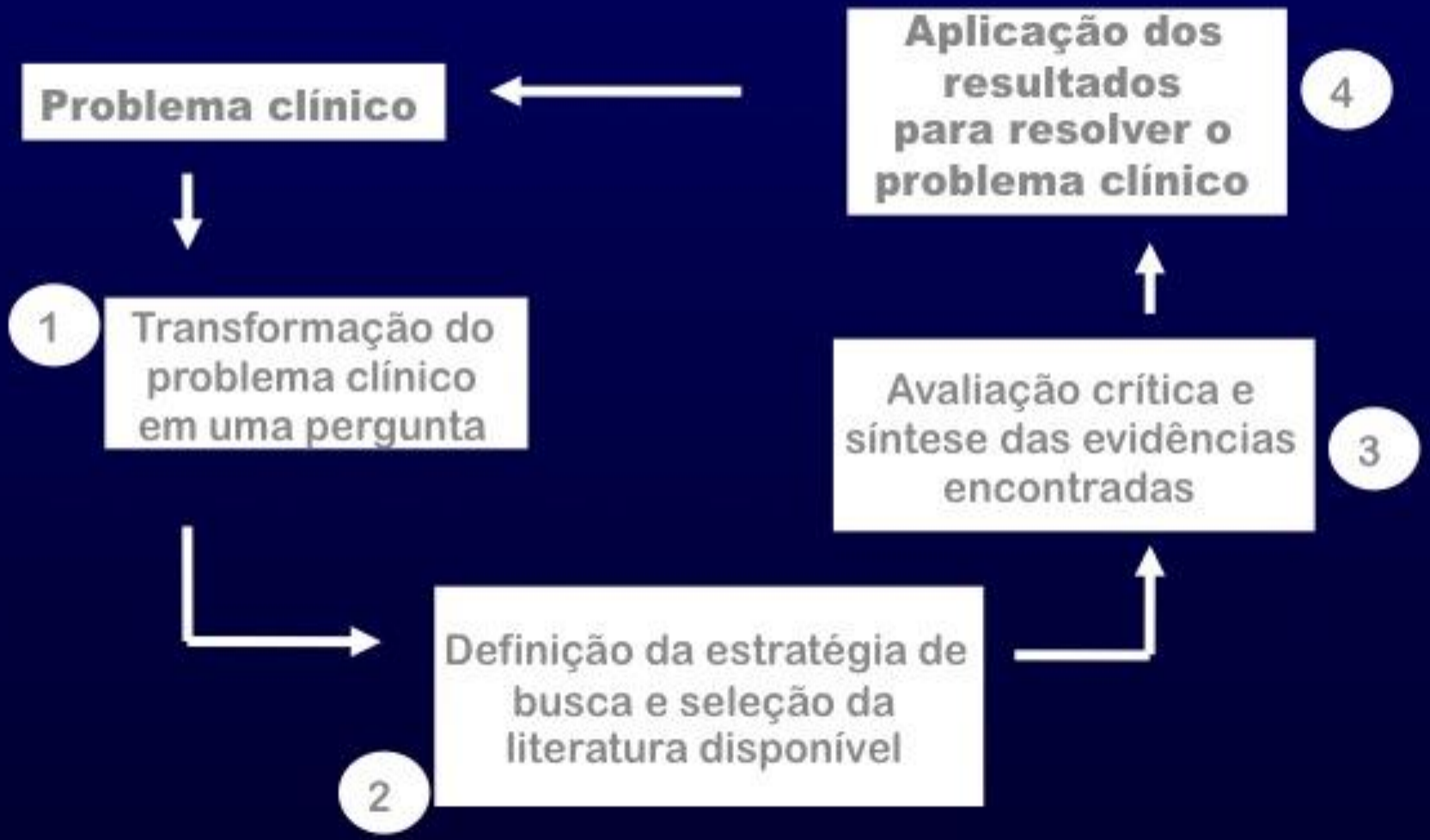


Davidoff et al: Evidence based medicine: a new journal to help doctors identify the information they need. BMJ 310: 1085,1995

Organizar a literatura

FALTA DE CRITÉRIOS no arquivamento das informações científicas

DECISÕES CLÍNICAS BASEADAS EM EVIDÊNCIAS



Passos para a prática de MBE

CENÁRIO CLÍNICO
Pergunta
Informação

BUSCA DA INFORMAÇÃO
Identificação
Seleção

AVALIAR CRITICAMENTE
Validade, Significância,Aplicabilidade

SÍNTESE DA INFORMAÇÃO
Força da evidência

RESOLUÇÃO DO CENÁRIO
Aplicação dos resultados

A BUSCA DA INFORMAÇÃO

Todas as fontes de informação têm a mesma qualidade científica?

Todas as fontes de informação produzem evidências científicas de igual qualidade?

Força das evidências científicas para intervenções médicas

- **Fraca**
  - Mecanismos (dedutiva)
    - Pesquisa básica
  - Experiência clínica (indutiva) isolada ou de grupo de peritos
    - Dados clínicos obtidos de forma não sistemática.
  - Pesquisa clínica observacional, sem grupo controle
    - Estudo de casos, de incidência, de prevalência

Força das evidências científicas para intervenções médicas

- **Intermediária**
  - Intervenção clínica sistemática mas com desfechos bioquímicos, fisiológicos ou celulares.
    - Ensaio clínico randomizado
  - Pesquisa clínica observacional com desfechos clínicos.
    - Estudos de caso-controle e coorte.
  - Intervenção clínica sem randomização.
    - Quase-experimento.

Força das evidências científicas para intervenções médicas

- **Intermediária**
  - Intervenção clínica sem grupo controle.
    - Experimento não controlado
  - Estudos ecológicos no tempo e espaço.
    - Séries temporais múltiplas

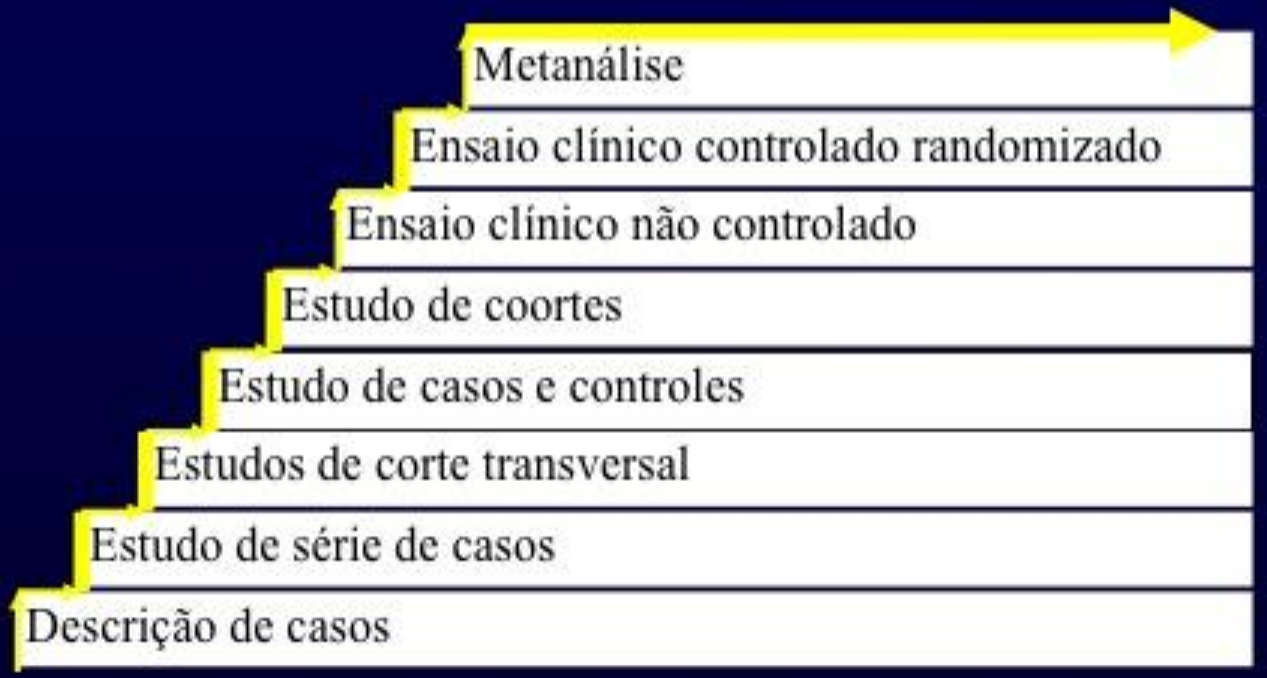
Força das evidências científicas para intervenções médicas

- **Forte**
  - Intervenção clínica sistemática com desfechos clínico-epidemiológicos.
    - Ensaio clínico randomizado

A BUSCA DA INFORMAÇÃO

Hierarquia das evidências

EVIDÊNCIA FRACA → EVIDÊNCIA FORTE



A BUSCA DA INFORMAÇÃO
Potencial benefício da intervenção

EVIDÊNCIA tipo I
no mínimo, uma revisão sistemática de boa qualidade

EVIDÊNCIA tipo II
no mínimo, um ensaio clínico controlado e randomizado de boa qualidade

EVIDÊNCIA tipo III
estudos de intervenção bem delineados, sem randomização

EVIDÊNCIA tipo IV
estudos observacionais bem delineados

EVIDÊNCIA tipo V
opinião de especialistas

Table 2. Levels of Evidence for Primary Research Question

Level	Therapeutic Studies: Investigating the Results of Treatment	Prognostic Studies: Investigating the Outcome of Disease	Diagnostic Studies: Investigating a Diagnostic Test	Economic and Decision Analyses: Developing an Economic or Decision Model
I	1. Randomized controlled trial a. Significant difference b. No significant difference but confidence intervals 2. Systematic review† of Level I randomized controlled trials (studies were homogeneous)	1. Prospective study* 2. Systematic review† of Level I studies	1. Testing of previously developed diagnostic criteria in series of consecutive patients (with universally applied reference "gold" standard) 2. Systematic review† of Level I studies	1. Clinically sensible costs and alternatives; values obtained from many studies; multiway sensitivity analyses 2. Systematic review† of Level I studies
II	1. Prospective cohort study‡ 2. Poor-quality randomized controlled trial (*e.g.*, <80% follow-up) 3. Systematic review† a. Level II studies b. Nonhomogeneous Level I studies	1. Retrospective study§ 2. Study of untreated controls from a previous randomized control trial 3. Systematic review† of Level II studies	1. Development of diagnostic criteria on basis of consecutive patients (with universally applied reference "gold" standard) 2. Systematic review† of Level III studies	1. Clinically sensible costs and alternatives; values obtained from limited studies; multiway sensitivity analyses 2. Systematic review† of Level II studies
III	1. Case-control study‖ 2. Retrospective cohort study§ 3. Systematic review† of Level III studies		1. Study of nonconsecutive patients (no consistently applied reference "gold" standard) 2. Systematic review† of Level III studies	1. Limited alternatives and costs; poor estimates 2. Systematic review† of Level III studies
IV	Case series (non, or historical, control groups)	Case series	1. Case-control study 2. Poor reference standard	No sensitivity analyses
V	Expert opinion	Expert opinion	Expert opinion	Expert opinion

*All patients were enrolled at the same point in their disease course (inception cohort) with ≥80% follow-up of enrolled patients.
†A study of results from two or more previous studies.
‡Patients were compared with a control group of patients treated at the same time and institution.
§The study was initiated after treatment was performed.
‖Patients with a particular outcome ("cases" with, for example, a failed arthroplasty) were compared with those who did not have the outcome ("controls" with, for example, a total hip arthroplasty that did not fail).

SPINE Volume 32, Number 19S, pp S66–S72

Table 3. Current Approach to Grades of Recommendations*[27]

Grade of Recommendation	Clarity of Risk/Benefit	Methodologic Strength of Supporting Evidence	Implications
1A	Clear	Randomized trials without important limitations	Strong recommendation; can apply to most patients in most circumstances without reservation
1B	Clear	Randomized trials with important limitations (inconsistent results, methodologic flaws†)	Strong recommendations, likely to apply to most patients
1C+	Clear	No RCTs, but RCT results can be unequivocally extrapolated, or overwhelming evidence from observation studies	Strong recommendation: can apply to most patients in most circumstances
1C	Clear	Observation studies	Intermediate-strength recommendation; may change when stronger evidence available
2A	Unclear	Randomized trials without important limitations	Intermediate-strength recommendation; best action may differ depending on circumstances or patients' or societal values
2B	Unclear	Randomized trials with important limitations (inconsistent results, methodologic flaws)	Weak recommendation; alternative approaches likely to be better for some patients under some circumstances
2C	Unclear	Observation studies	Very weak recommendations; other alternatives may be equally reasonable

*Since studies in categories B and C are flawed, it is likely that most recommendations in these classes will be Level 2. The following considerations will bear on whether the recommendation is Grade 1 or Grade 2: the magnitude and precision of the treatment effect, patients' risk of the target event being prevented, the nature of the benefit, the magnitude of the risk associated with treatment, variability in patient preferences, variability in regional resource availability and health-care delivery practices, and cost considerations. Inevitably, weighing these considerations involves subjective judgment.

†These situations include RCTs with both lack of blinding and subjective outcomes, where the risk of bias in measurement of outcomes is high. and with large loss to follow-up.

A BUSCA DA INFORMAÇÃO
Tipos de evidência

1. BENÉFICA
   efetividade claramente demonstrada

2. PROVÁVEL DE SER BENÉFICA
   efetividade não tão firmemente estabelecida

3. BALANÇO ENTRE BENEFÍCIOS E EFEITOS ADVERSOS
   efeitos ponderados de acordo com as circunstâncias individuais

4. DESCONHECIDO
   insuficiente ou inadequado para recomendação

5. IMPROVÁVEL DE SER BENÉFICA
   falta de efetividade não tão claramente demonstrada

6. PROVÁVEL DE SER INEFETIVA OU PREJUDICIAL
   falta de efetividade ou prejuízo claramente demonstrado

Hierarquia das pesquisas clínicas

http://cebm.jr2.ox.ac.uk/docs/levels.html

The Problems and Limitations of Applying Evidence-Based Medicine to Primary Surgical Treatment of Adult Spinal Deformity

Keith H. Bridwell, MD, Sigurd Berven, MD, Charles Edwards, II, MD, Steven Glassman, MD, Christopher Hamill, MD, and Frank Schwab, MD

Conclusion. A multicenter funded study is needed to answer appropriate questions.

Key words: adult scoliosis, SRS-22, outcomes analysis. **Spine 2007;32:S135–S139**

Evidence Based Medicine

Analysis of Scheuermann Kyphosis

Thomas G. Lowe, MD, and Breton G. Line, BSME

Results and Conclusion. Scheuermann kyphosis is the most common cause of hyperkyphosis in adolescence. Its

lowing surgical intervention; however, clinical outcomes data are not yet available, and the studies available do not have strong levels of evidence.

Key words: kyphosis, ring apophysis, Scheuermann kyphosis, TLSO brace, vertebral body wedging. **Spine 2007; 32:S115–S119**

Evidence-Based Medicine Analysis of All Pedicle Screw Constructs in Adolescent Idiopathic Scoliosis

Kishore Mulpuri, MBBS, MS(Ortho), MHSc(Epi), Angeliki Peelios, MSc, and Christopher W. Reilly, MD, FRCSC

Conclusion. In the absence of evidence from randomized trials, surgeons must rely on the best available information to guide patient management decisions. Although there have been many publications on the topic of all pedicle screw constructs in AIS, evidence regarding the advantage of all pedicle screw constructs remain limited to case series, biomechanical studies, and expert opinions.

Key words: pedicle screws, adolescent idiopathic scoliosis, evidence-based medicine, posterior fusion, posterior instrumentation. **Spine 2007;32:S109–S114**

Evidence-Based Medicine Analysis of Isthmic Spondylolisthesis Treatment Including Reduction *Versus* Fusion *In Situ* for High-Grade Slips

Ensor E. Transfeldt, MD, and Amir A. Mehbod, MD

Conclusion. Because of the paucity of high levels of evidence, we are not able to formulate clear guidelines for treatment of high-grade spondylolisthesis based on the best evidence available in the published literature.

Key words: spondylolisthesis, high grade fusion, *in situ* spondylolisthesis reduction, evidence-based medicine. **Spine 2007;32:S126–S129**

Passos para a prática de MBE

CENÁRIO CLÍNICO
Pergunta
Informação

A Toracoscopia é melhor que a Minitoracotomia ?

Redução de Dor pós operatória

Apresenta menor índice de sangramento

Atinge os mesmos objetivos cirúrgicos

- Estratégia de Busca:
- MESH TERMS

- (spine surgery) and (thoracotomy or thoracoscopy)
- 3794 artigos
- refinando:
- 74 artigos
- 03 artigos experimentais
- 01 artigo comparativo.

Video Assisted Thoracoscopic Surgery in Idiopathic scolisis

Grau de recomendação
2C

Coorte
28 pacientes toracotomia
25 pacientes VATS

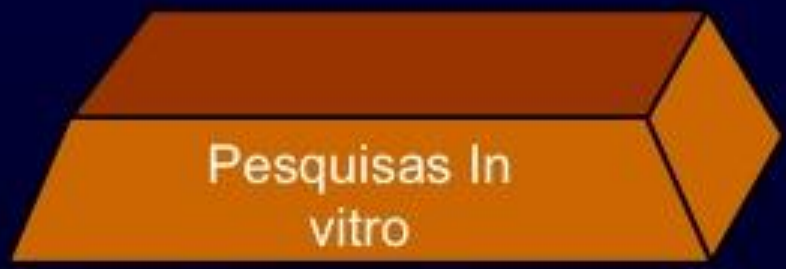
Resultados
Melhor retirada do disco
menos sangramento
correção semelhante

Spine, 32 (6) 704-7, 2007

A Biomechanical Comparison of Open and Thoracoscopic Anterior Spinal Release in a Goat Model

Teste Mecânico
Vértebras de carneiro
Flexibilidade da curva

Spine 23(5), 1 March 1998, pp 530-535



Lumbar Facet Joint Osteoarthritis: A Review

Leonid Kalichman, BPT, PhD, and David J. Hunter, MBBS, PhD

Objectives: The facet joints (FJ) can be a potentially important source of symptoms because of the high level of mobility and load forces, especially in the lumbar area. We reviewed the anatomy, biomechanics, and possible sources of pain of the FJ, natural history, and risk factors of lumbar FJ osteoarthritis and briefly reviewed the relevant imaging methods.

Methods: PubMed and MEDLINE databases (1950-2006) were searched for the key words "facet joints," "zygapophyseal joints," "osteoarthritis," "low back pain," and "spondyloarthritis." All relevant articles in English were reviewed. Pertinent secondary references were also retrieved.

Results: The FJ play an important role in load transmission; they provide a posterior load-bearing helper, stabilizing the motion segment in flexion and extension and also restricting axial rotation. The capsule of the FJ, subchondral bone, and synovium are richly innervated and can be a potential source of the low back pain. Degenerative changes in the FJ comprise cartilage degradation that leads to the formation of focal and then diffuse erosions with joint space narrowing, and sclerosis of the subchondral bone. Because the most prominent changes occur in bone, the best method of evaluation of the FJ is computed tomography. Risk factors for lumbar FJ osteoarthritis include advanced age, relatively more sagittal orientation of the FJ, and a background of intervertebral disk degeneration.

Conclusions: An up-to-date knowledge of this subject can be helpful in the development of diagnostic techniques and in the prevention of lumbar FJ osteoarthritis and low back pain and can assist in the determination of future research goals.

 Semin Arthritis Rheum 37:69-80

Keywords: facet joints, osteoarthritis, risk factors, lumbar spine

Implementing Evidence-Based Medicine

The Role of Market Pressures, Compensation Incentives, and Culture in Physician Organizations

Pesquisa feita com 57 fontes pagadoras responsáveis por 1797 médicos

A utilização da MBE nas decisões clínicas tem uma associação positiva forte

- **Com a pressão exercida no mercado para otimização da utilização dos recursos disponíveis**
- **Na escolha de métodos de incentivo e compensação médica de produção**

MEDICAL CARE
Volume 39, Number 7, Physician-System Alignment Supplement, pp I-62-I-78

OBRIGADO