Utilisation PICO

Aide à la formulation de la question de recherche et à la recherche d’articles

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PT, PHD
LA méthode PICO

1. Définition

2. Objectifs :
   - formuler une question clinique
   - rechercher une information relevante
<table>
<thead>
<tr>
<th></th>
<th>Patient or problem</th>
<th>Can be only one patient, a group of patients with a particular condition or a health problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention</td>
<td>Represents the intervention of interest, which can be therapeutic, preventive, diagnostic, prognostic, administrative or related to economic issues</td>
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<tr>
<td>C</td>
<td>Control or Comparaison</td>
<td>Defined as a standard intervention, the most used intervention or no intervention</td>
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<tr>
<td>O</td>
<td>Outcome</td>
<td>Expected result</td>
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</tbody>
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**Legend:**
P: Patient or problem
I: Intervention
C: Control or Comparaison
O: Outcome
3. Formuler une question de recherche

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Chez les enfants avec une bronchite aigue, est-ce que cela sert à quelque de chose de leur donner des antibiotiques ?

Comment soigner les problèmes de spondylolyse ?
a parent might ask whether a single shot of a steroid would work as well as five days of oral steroids for a young child sent home from the ER after an asthma exacerbation.
Among young children with acute asthma exacerbation, is a single dose of IM dexamethasone comparable to five days of oral prednisolone for resolution of asthma symptoms?
A pregnant woman with type 2 diabetes is concerned about the effect her current treatment may have on her pregnancy and unborn child. The GP has heard that insulin pump therapy may be a more successful treatment than conventional insulin therapy. However, the GP wants to get his facts right, so searches the literature.
The question he wants to answer is:
Are insulin pumps more effective than conventional therapies in managing type 2 diabetes in pregnant women?
4. Faire une recherche

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</tbody>
</table>
5. Revue systématique de la littérature

1. Introduction
2. Méthode
3. Résultats
4. Discussion
5. Conclusion

literature
search, study selection, risk of bias
assessment, data extraction, and data analysis.
5. Revue systématique de la littérature

1. Introduction

- Etat des connaissances
- Inconnues
- Question de recherche
- Intérêt clinique
- Objectifs
5. Revue systématique de la littérature

2. Méthode

- Identification : Recherche de la littérature
- Screening : Sélection des articles
- Eligibility : Evaluation des risques de biais
- Extraction des données
- Analyse des données
5. Revue systématique de la littérature

2. Méthode

- Identification : Recherche de la littérature (en binôme)
  - Question de recherche
  - Equation de recherche
  - Bases de données (Pubmed, Sciencedirect, Embase, Pedro, Cochrane, Biomedcentral, ...)

- Screening : Sélection des articles (seul)
  - duplicata
  - Critères d’inclusion sur base des titres et résumés : langue, PICOS, année (attention si précédente SR)
  - Mise en commun et décision
P : définir les détails: âge, sexe, symptômes, durée et localisation des symptômes...

I : définir en détails

C : pas tjs utile

O : paramètres : essayer de remplir les 3 domaines de la CIF

S : types d’études : donner la préférence aux RCT mais prendre d’autres études si manque de RCT ou de mauvaise qualité
5. Revue systématique de la littérature

2. Méthode

- Evaluation des risques de biais (seul)
  - Texte complet
  - Grille d’évaluation des risques de biais (qualité scientifique) + critères d’inclusion (cut-off ou critères indispensables)
  - Mise en commun et décision

- Extraction des données (binôme)
  - faire un tableau type PICOS

<table>
<thead>
<tr>
<th>Articles</th>
<th>P</th>
<th>I</th>
<th>C</th>
<th>O</th>
<th>S</th>
<th>Qualité scientifique</th>
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5. Revue systématique de la littérature

2. Méthode

- Analyse des données
  - Utilisation d’une méthode statistique pour analyser et résumer les données dans la SR
  - Revue qualitative
  - Méta-analyse

L’objectif de la plupart des SR est de fournir une estimation globale valable de l’effet d’un traitement, basé sur une moyenne pondérée des résultats de toutes les études disponibles.

Une revue qualitative peut être réalisée en attribuant des niveaux d’évidence à l’efficacité d’un traitement en prenant en compte les caractères PICOS.
Niveaux d’évidence et pertinence clinique

Le niveau d’évidence est déterminé en groupant les études similaires en terme PICOS en vue d’obtenir un niveau global de preuve par rapport à un traitement ou autre élément.

La pertinence clinique (d’une étude) est basée sur le calcul de « l’effect size » des variables étudiées et relevantes.

Pratiquement :

- calcul de la diff. des moyennes (diff minimum cliniquement importante)
  \[ \text{MD} = \text{meanA} - \text{meanB} \]
  et comparer avec minimal detectable change (MDC)
  (http://www.rehabmeasures.org/default.aspx)

- calcul du coéfficient de Cohen ou moyenne standardisée des différences
  \[ SMD = \frac{\text{meanA} - \text{meanB}}{(\text{SDA} + \text{SDB}/2)} \]
  \[ (\text{SDA} + \text{SDB}/2) = \text{moyenne des 2 SD} \]

Généralement : la pertinence clinique est déterminée par 2 conditions

- il existe dans l’étude une diff significative entre les groupes (P< 0.05)
- \( SMD \geq 0.4 \) ou \( \text{MD} > \text{MDC} \)
Strength of evidence: Conditions description

- Strong: Consistent findings from multiple ‘high quality trials’ (level A)

- Moderate: Consistent findings among multiple ‘low quality trials’ corresponding to moderate quality (Level B, and/or one level A)

- Limited: One level B

- Conflicting: Inconsistent findings among multiple trials

- No evidence: No trials
Exemple :

Patients lombalgiques, évaluation de la mobilité du tronc en flexion (en °):
- traités par thérapie manuelle : 20° ± 3°
- Traités par placébo : 15° ± 3°

- MD : 5° (MDC ?)
- SMD : 20-15 / [ (3+3)/2] = 5 / 3 = 1.3° = effect size élevé

- traités par thérapie manuelle : 20° ± 10°
- taités par placébo : 15° ± 7°

- MD : 5°
- SMD : 5/8.5 = 0.6 = effect size modéré
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Yes/No/Where</th>
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<tbody>
<tr>
<td>1.</td>
<td>eligibility criteria were specified</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>2.</td>
<td>subjects were randomly allocated to groups (in a crossover study, subjects were randomly allocated an order in which treatments were received)</td>
<td>no □ yes □</td>
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<tr>
<td>3.</td>
<td>allocation was concealed</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>4.</td>
<td>the groups were similar at baseline regarding the most important prognostic indicators</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>5.</td>
<td>there was blinding of all subjects</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>6.</td>
<td>there was blinding of all therapists who administered the therapy</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>7.</td>
<td>there was blinding of all assessors who measured at least one key outcome</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>8.</td>
<td>measures of at least one key outcome were obtained from more than 85% of the subjects initially allocated to groups</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>9.</td>
<td>all subjects for whom outcome measures were available received the treatment or control condition as allocated or, where this was not the case, data for at least one key outcome was analysed by “intention to treat”</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>10.</td>
<td>the results of between-group statistical comparisons are reported for at least one key outcome</td>
<td>no □ yes □</td>
</tr>
<tr>
<td>11.</td>
<td>the study provides both point measures and measures of variability for at least one key outcome</td>
<td>no □ yes □</td>
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</table>
Criteria list for methodological quality assessment from Cochrane Collaboration Back Review Group

A Was the method of randomization adequate? Yes/No/Don’t know

B Was the treatment allocation concealed? Yes/No/ Don’t know

C Were the groups similar at baseline regarding the most important prognostic indicators? Yes/No/Don’t know

D Was the patient blinded to the intervention? Yes/ No/Don’t know

E Was the care provider blinded to the intervention? Yes/No/Don’t know

F Was the outcome assessor blinded to the intervention? Yes/No/Don’t know

G Were cointerventions avoided or similar? Yes/ No/Don’t know

H Was the compliance acceptable in all groups? Yes/No/Don’t know

I Was the drop-out rate described and acceptable? Yes/No/Don’t know

J Was the timing of the outcome assessment in all groups similar? Yes/No/Don’t know

K Did the analysis include an intention-to-treat analysis? Yes/No/Don’t know
Operationalization of the criteria list

A: A random (unpredictable) assignment sequence. Examples of adequate methods are computer generated random number table and use of sealed opaque envelopes. Methods of allocation using date of birth, date of admission, hospital numbers, or alternation should not be regarded as appropriate.

B: Assignment generated by an independent person not responsible for determining the eligibility of the patients. This person has no information about the persons included in the trial and has no influence on the assignment sequence or on the decision about eligibility of the patient.

C: In order to receive a ‘yes,’ groups have to be similar at baseline regarding demographic factors, duration and severity of complaints, percentage of patients with neurologic symptoms, and value of main outcome measure(s).

D: The reviewer determines if enough information about the blinding is given in order to score a ‘yes.’

E: The reviewer determines if enough information about the blinding is given in order to score a ‘yes.’
F: The reviewer determines if enough information about the blinding is given in order to score a ‘yes.’

G: Cointerventions should either be avoided in the trial design or similar between the index and control groups.

H: The reviewer determines if the compliance to the interventions is acceptable, based on the reported intensity, duration, number and frequency of sessions for both the index intervention and control intervention(s).

I: The number of participants who were included in the study but did not complete the observation period or were not included in the analysis must be described and reasons given. If the percentage of withdrawals and drop-outs does not exceed 20% for short-term follow-up and 30% for long-term follow-up and does not lead to substantial bias a ‘yes’ is scored. (NB these percentages are arbitrary, not supported by literature).

J: Timing of outcome assessment should be identical for all intervention groups and for all important outcome assessments.

K: All randomized patients are reported/analyzed in the group they were allocated to by randomization for the most important moments of effect measurement (minus missing values) irrespective of noncompliance and cointerventions.