Clinical practice guidelines for acute diarrhea in children: Methodological quality

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Background

• Acute diarrhea (AD) is the second most common disease in children

• AD is globally associated with high morbidity in developed countries and with high mortality in undeveloped countries.

• The Colombian Ministry of Health financed the development CPG of some diseases in order to improve health care system and to do cost-effectiveness analysis. Diarrhea in children was one of them

• We formed a guideline developer group (GDG) in order to develop the Clinical Practice Guidelines (CPG) of prevention, diagnosis and treatment of diarrheal diseases in children
Guía Metodológica para la elaboración de Guías de Atención Integral en el Sistema General de Seguridad Social en Salud colombiano
Background

• Before developing a de novo-CPG it is recommended to assess published guidelines in order to consider adaptation of a high quality CPG

• There were a lot of CPG of diarrhea and gastroenteritis in children available in the literature

• The quality of published guidelines on childhood diarrhea was assessed by Lo Veccio et al. in 2011, but it had some flaws
Evaluation of the Quality of Guidelines for Acute Gastroenteritis in Children With the AGREE Instrument

Andrea Lo Vecchio, Antonietta Giannattasio, Christopher Duggan, Salvatore De Masi, Maria Teresa Ortisi, Luciana Parola, and Alfredo Guarino

Problems:

- First version of the AGREE instrument
- Search was limited to English language CPG
- Databases and five web-sites of CPG or associations
- Date search limit: 2008
- In 2009 were published: 1 guideline in Colombia and 2 guidelines from NICE and ESPGHAN
- In 2009, were published some Cochrane Systematic reviews about treatments in diarrhoea
- Authors included non-evidence based CPG
- This paper was not enough for us to do an assessment of the quality of theses CPG

(JPGN 2011;52: 183–189)
Objective

• To assess the quality of CPG on acute diarrhea or gastroenteritis in children using the AGREE-II instrument (Spanish version).
Methods

• Systematic review of CPG
• Databases:
  o Electronic databases: EMBASE, MEDLINE, LILACS
  o National clearinghouses
  o Non-electronic sources: Hand-searching:
    • Known CPG by authors, researchers, members of the group and clinical experts
    • Pediatrics, gastroenterology, familiar medicine and nursing congresses and textbooks
• We searched from June to August of 2011
Methods

- We exclude guidelines that:
  - Were not Evidence-based
  - Had a different scope
  - Exclusive adult population
  - Diarrhea in children with chronic diseases

- Each EB-guideline was independently assessed using AGREE-II (Spanish version) by three (3) clinical epidemiologists

- Appraisers (MSc in Clinical epidemiology)
  - Genera practitioner (1), Pediatrician (6)
Methods

• The assessment was made based on the information presented in the published version of the CPG and on the website of the organization, institution or journals.

• We acceded when possible to evidence tables and search strategies by contacting authors and institution by mail.
Methods

• Spanish-AGREE II instrument has 23 items grouped in 6 domains and 2 final items for the global evaluation.

• The score is calculated with proportions for each domain

• There is not a minimum score to recommend a CPG

• **Rigor of development** was chosen as the most important domain based on Colombian guidelines methodology manual

• 60% was the cut off point to consider a high quality guideline
Methods

- The score of each domain was calculated based in the 3 appraisers evaluation
- Differences between the scores in each items were analyzed by one of the appraisers.
- When differences between appraisers were more than 4 points, they were asked to reevaluate their score, in order to get a consensus
- We calculated medians and interquartile ranges (IQR) of the scores in each domain
APPRAISAL OF GUIDELINES FOR RESEARCH & EVALUATION II

INSTRUMENT

INSTRUMENTO AGREE II

INSTRUMENTO PARA LA EVALUACIÓN DE GUÍAS DE PRÁCTICA CLÍNICA
Results

• We found 63 diarrhea guidelines
• 17 of which (26.9%) were evidence-based.
• The rest (46 CPG) were: protocols, narrative reviews, Non evidence –based guidelines, experts consensus, guidelines of associations and organizations (WHO), cost-effectiveness studies
• 10 in English language: Canada, India, UK, USA, Europe, Australia
• 7 in Spanish language: Colombia, México, Guatemala, Costa Rica, Spain
• Peer-reviewed journals-databases (6), textbooks (2), guideline developer web-site (1), academic institutions or scientific association (4) or government organizations (4)
<table>
<thead>
<tr>
<th>Title, reference</th>
<th>Developer agency or author and filiation</th>
<th>Country &amp; year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acute Gastroenteritis in children aged 2 months through 5 years</td>
<td>Cincinnati Children's Hospital Medical Center</td>
<td>United States of America, 2006</td>
</tr>
<tr>
<td>3. Diarrhoea and vomiting caused by gastroenteritis diagnosis, assessment and anagement in children younger than 5 years</td>
<td>National Institute for Health and Clinical Excellence</td>
<td>United States of America, 2009</td>
</tr>
<tr>
<td>5. Evidence based practice guideline for the management of diarrhoea with or without vomiting in children</td>
<td>Victorian Department of Human Services of Australia</td>
<td>Australia, 2009</td>
</tr>
<tr>
<td>9. Oral rehydration therapy and early refeeding in the management of childhood gastroenteritis</td>
<td>Canadian Paediatric Society</td>
<td>Canada, 2005</td>
</tr>
<tr>
<td>10. Manejo del paciente con diarrea aguda</td>
<td>Instituto Guatemalteco de Seguridad Social</td>
<td>Guatemala, 2010</td>
</tr>
<tr>
<td>13. Tratamiento de diarrea aguda en niños y adultos</td>
<td>Caja Costarricense del Seguro Social</td>
<td>Costa Rica, 2005</td>
</tr>
<tr>
<td>15. Enfermedad Diarreica Aguda</td>
<td>Briceno G. Fundacion Cardio-Infantil</td>
<td>Colombia, 2006</td>
</tr>
<tr>
<td>16. Prevención diagnóstico y tratamiento de la diarrea aguda en niños de dos meses a cinco años en el primero y segundo nivel de atención</td>
<td>Instituto mexicano de Seguros Sociales-IMSS</td>
<td>México 2008</td>
</tr>
<tr>
<td>Guideline</td>
<td>1 Scope and purpose</td>
<td>2 Stakeholder involvement</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>Guideline 01</strong></td>
<td>96%</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Guideline 02</strong></td>
<td>89%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Guideline 08</strong></td>
<td>100%</td>
<td>96%</td>
</tr>
<tr>
<td>Guideline 10</td>
<td>94%</td>
<td>39%</td>
</tr>
<tr>
<td><strong>Guideline 11</strong></td>
<td>93%</td>
<td>94%</td>
</tr>
<tr>
<td><strong>Guideline 48</strong></td>
<td>89%</td>
<td>61%</td>
</tr>
<tr>
<td>Guideline 21</td>
<td>59%</td>
<td>30%</td>
</tr>
<tr>
<td>Guideline 30</td>
<td>52%</td>
<td>6%</td>
</tr>
<tr>
<td>Guideline 31</td>
<td>70%</td>
<td>20%</td>
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<td>Guideline 33</td>
<td>31%</td>
<td>11%</td>
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<td>Guideline 35</td>
<td>67%</td>
<td>37%</td>
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<td>Guideline 36</td>
<td>61%</td>
<td>41%</td>
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<td>Guideline 37</td>
<td>96%</td>
<td>63%</td>
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<tr>
<td>Guideline 52</td>
<td>74%</td>
<td>20%</td>
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<tr>
<td>Guideline 57</td>
<td>28%</td>
<td>15%</td>
</tr>
<tr>
<td>Guideline 58</td>
<td>63%</td>
<td>26%</td>
</tr>
<tr>
<td>Guideline 61</td>
<td>94%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>All, median (IQR)</strong></td>
<td><strong>74%</strong></td>
<td><strong>39%</strong></td>
</tr>
<tr>
<td></td>
<td>(60-94%)</td>
<td>(20-62%)</td>
</tr>
</tbody>
</table>
Results

- Domains 1 (scope and purpose) and 4 (clarity of presentation) had the highest scores: 74 (60-94%) and 78 (56.5-91%), respectively.

- Domains 5 (applicability) and 6 (editorial independence), had the lowest: 13 (2-24.5%) and 8 (0-58%), respectively.

- Only five guidelines scored over 60% in the third domain (rigour of development) and were considered as “recommended”.
Results

Recommended (5)

- Domain 5: 31 (6-69%)
- Domain 6: 54 (0-97%)
- Domain 1: 93,5 (89-100%)
- Domain 4: 93,5 (89-95%)
- Domain 3: 70 (60-42%)
- Domain 2: 65 (42-95%)

Not recommended (12)

- Domain 5: 10 (0-15%)
- Domain 6: 8 (8-13%)
- Domain 1: 63 (17-79%)
- Domain 4: 69 (57-80%)
- Domain 3: 27 (20-40%)
- Domain 2: 26 (18-32%)
Discussion

• There is an urgent need to improve the quality of CPGs in acute diarrhea in children by incorporating high quality standards in the development process based on the key points of a high-quality CPG

• Most of CPG were from developed countries

• There are several diarrhea CPG available in Spanish language but its quality is quite low in comparison to English languages ones

• Two CPG were retrieved form Spanish textbooks
Discussion

- There are a lot of CPG that are called EB-guidelines and they are not.

- We retrieved CPG from databases, textbooks, developers websites, national clearinghouses. The search of CPG must be much wider than that for primary studies.

- Diarrhea is a common disease in children. It is desirable to have the best evidence-based recommendation available.
Discussion

• First (1th) and 4th domains scored high (upper 60%) in both recommended and not recommended CPG

• Fifth and 6th domains scored low in both recommended and not recommended CPG

• Third domain must be the one that makes the difference

• Developers are concerned about describing Scope and objectives and about the clarity of presentation, instead of being rigorous in methodology

• We must be alert about the 3rd domain better than others that seem “attractive”: Clarity of recommendations and scope
Limitations

• We have conclusions that could not be reproducible in other diseases
• We had a low number of CPG
• The 60% as a cut-point was recommended by the Colombian guidelines, and the group agreed with this score.
• What about another cut-points? 70 – 75 – 80 %?
• AGREE collaboration doesn’t recommend a score, so it could be controversial our cut-off point
Conclusions

• There is low quality in Spanish language CPG on diarrhea
• Most of CPG on diarrhea were not evidence based
• Most of evidence based CPG had low to moderate quality
• In AGREE-II, Third domain makes the difference
• Scope and purpose, and clarity could be good even in low quality guidelines
Danke!

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