May 20th, 2016
DDW
San Diego, USA

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Chairman of Colon and Rectal Unit
Clinica Las Condes
Associated Professor U. de Chile
MSCCH, MSCPCH

PRENEC
(National Program in Colorectal Cancer Screening)
Colorrectal cancer mortality in Chile

Rev Med Chile 2006
Mortality >50%

Colorectal Disease 2012
Zarate A y cols.
> 100%

2020
>50%
We need to act!

• Latin America:
  • Curative Medicine (no health`s logistic for preventive medicine)
  • Lack of population awareness about risk factors and screening
  • Lack of strong data about national tumor registry (incidence or prevalence)
  • Resources restrictions
  • Enough colonoscopist´s offer and quality of the colonoscopy?
PREVICOLON

Multicentric Campaign in 2007

- We have to make “noise”
- We need to develop a team work
- We have to define strategies
- We need to include Public Hospitals
- We need to create a database to analyze and communicate
Colonoscopy for pts. with +ve iFOBT: 50% (did not underwent colonoscopy)

Cecal intubation rate (mean): 58% (big variation among centers)

Among the 6 centers only one is still active (Clínica Las Condes). It means, all the Public Hospitals stopped after the first campaign.
Problems

• Low people educational level:
  • Low iFOBT return rate
  • Low colonoscopy adherence

• Low endoscopy structure:
  • No scheduling nurse or secretary
  • No triage protocols
  • Not enough equipments

• No protocolized activity:
  • Endoscopy quality standard
  • Endoscopic or surgical treatment of CCR
  • Complication´s protocol

• No follow-up structure and logistic
What we need?

- To develop a model for doctor assistance and motivation
- To make a highly efficient CCR screening model
- To record high quality information
- To communicate to the Health´s authorities
Agreement
(July 2009)

Clínica Las Condes CLC

Tokyo Medical and Dental University TDMU

Ministerio de Salud de Chile MINSAL

AIM: To reduce CCR mortality rate
Prenec

- CLC team’s design for Public Hospitals based on:
  - Latin America budget’s restriction
  - Public Hospitals situation
  - Medical support (nurses and assistant)
  - Endoscopy center efficiency
  - Standardization of endoscopy, surgical and anatomopathologic indicators
  - Data recording and patient’s follow-up
  - Continuous medical education

Each team is composed by 5 people:

Nurses (2)
Nurse assistant (2)
Secretary (1)

Each center should assess 3,000 people per year

CLC provides:

- Protocols
- Database
- Endoscopy center certifications
- Monthly teleconference
- Endoscopy, pathology and surgical assistance
## Logistic

<table>
<thead>
<tr>
<th>Secretary</th>
<th>Nurse assistance</th>
<th>Nurse</th>
<th>Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone call and invite</td>
<td>Risk assessment and iFOBT education</td>
<td>Colonoscopy triage</td>
<td>Colonoscopy</td>
</tr>
<tr>
<td>Colonoscopy scheduling</td>
<td>Colonoscopy bowel prep</td>
<td>Colonoscopy bowel prep</td>
<td>Surgery</td>
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<tr>
<td>Bowel preparation</td>
<td>Data registry</td>
<td>Data registry</td>
<td>Follow-up</td>
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<tr>
<td>Follow-up</td>
<td>Teleconference</td>
<td>Teleconference</td>
<td>Teleconference</td>
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<tr>
<td></td>
<td></td>
<td>Follow-up scheduling</td>
<td>Indicators accomplishment</td>
</tr>
<tr>
<td>Target population</td>
<td>Enrollment</td>
<td>iFOBT</td>
<td>Treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colonoscopy</td>
<td>Follow-up</td>
</tr>
</tbody>
</table>
Each center must assess **3,000 people per year**
- Team full time dedicated (2 nurses-2 nurse assistant -one secretary)
- Supervised activity by CLC-TMDU team (network indicators)
- Endoscopy assistance by TMDU and CLC doctors
- Monthly teleconferences
- Regular feedback about indicators
- High quality information for further analysis and publications
PRENEC
2012 - 2016

Valparaíso
Drs. S. Flores - H. Peña – P. Chacón
(3.000 personas)

Santiago - HSBA
Dr. R. Estela – U. Kronberg
(6.000 personas)

Punta Arenas
Drs: S. Karelovic – H. Carrasco
(3.000 personas)
Monthly Teleconference

Continuous medical education

1. Resolution of complex cases
2. Pathologist’s agreement
3. Decision making about endoscopist and surgeons
4. Follow-up
5. Network feedback
6. Research protocols
Results
(2012 – 2015)

- Patient’s enrollment: 16,980
- Colon-check return (iFOBT) 16,168 (95,33%)
  - Positives 2,272 (14,5%)
- Colonoscopy 3,622
- Morbidity:
  - Perforation 2 (one surgical treatment)
  - HDB 5 (endoscopic treatment)
- Mortality 0
## Results

2012-2015

- **N:** 16,980 people
- **Colonoscopy:** 3,622
  - Adenomas: 43%
- **Patient s with cancer:** 146 pts.
- **Endoscopic treatment of cancer:** 99 (68%)
  - Morbidity/mortality: 0
- **Surgical treatment (mainly laposcopic):** 47
- **Stage:**
  - I - II: 90%
  - III: 10%
International collaboration between Japan and Chile to improve detection rates in colorectal cancer screening.

Okada T1,2, Tanaka K1, Kawachi H1, Ito T1,3, Nishikage T1, Odagaki T1, Zárate AJ4, Kronberg U4, López-Köstner E4, Karelovic S5, Flores S6, Estela R7, Tsubaki M1, Uetake H2,8, Eishi Y3, Kawano T2.

Abstract

BACKGROUND: In Chile, mortality from colorectal cancer (CRC) has increased rapidly. To help address this issue, the Prevention Project for Neoplasia of the Colon and Rectum (PRENEC) program was initiated in 2012 with intensive support from Tokyo Medical and Dental University (TMDU) in Tokyo, Japan, as part of an international collaboration.

METHODS: From June 2012 to July 2014, a total of 10,575 asymptomatic participants were enrolled in PRENEC. Participants with positive immunochemical fecal occult blood test (iFOBT) results or a family history of CRC underwent colonoscopy. The colonoscopy results from a similar, previous project in Chile (PREVICOLON) were compared with those from PRENEC. Furthermore, the initial colonoscopies of 1562 participants in PRENEC were analyzed according to whether the colonoscopists were from TMDU or Chile.

RESULTS: The complete colonoscopy, adenoma detection, and cancer detection rates were 88.0%, 26.7%, and 1.1%, respectively, in PREVICOLON, while the corresponding values were 94.4%, 41.8%, and 6.0%, respectively, in PRENEC. In PRENEC, 107 cases of CRC were detected, amounting for 1.0% of all participants. Considering initial colonoscopies in PRENEC, the complete colonoscopy, adenoma detection, and cancer detection rates were 97.4%, 45.3%, and 9.3%, respectively, for physicians at TMDU and 93.3%, 41.5%, and 5.1%, respectively for Chilean physicians. The detection rates of intramucosal cancer were 7.3% and 3.7%, respectively, for TMDU and Chilean physicians.

CONCLUSIONS: Quality indicators of colonoscopy substantially improved from PREVICOLON to PRENEC. The assessments made by Chilean physicians alone were improved in PRENEC, but remained better in the TMDU group. Moreover, physicians from TMDU detected more CRCs than Chilean physicians, especially at earlier stages. Cancer 2015. © 2015 American Cancer Society.
<table>
<thead>
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<tbody>
<tr>
<td>Total number of participants</td>
<td>6348</td>
<td>10575</td>
</tr>
<tr>
<td>Total number of colonoscopy</td>
<td>1184</td>
<td>1780</td>
</tr>
<tr>
<td>Number of complete colonoscopy reached to cecum</td>
<td>1042 (88.0)</td>
<td>1680 (94.4)</td>
</tr>
<tr>
<td>Colonoscopy completion rate (%)</td>
<td>88.0</td>
<td>94.4</td>
</tr>
<tr>
<td>Colonoscopy with at least one adenoma or adenocarcinoma</td>
<td>317 (26.8)</td>
<td>745 (41.9)</td>
</tr>
<tr>
<td>ADR (%)</td>
<td>26.8</td>
<td>41.9</td>
</tr>
<tr>
<td>Colonoscopy with adenocarcinoma</td>
<td>13 (1.10)</td>
<td>107 (6.10)</td>
</tr>
<tr>
<td>Cancer detection rate (%)</td>
<td>1.10</td>
<td>6.01</td>
</tr>
<tr>
<td>Cancer incidence among all participantes (%)</td>
<td>0.20</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Abbreviations: ADR, adenoma detection rate.
Table 3. Comparison of the initial colonoscopies of each participant in PRENEC

<table>
<thead>
<tr>
<th></th>
<th>Total N=1562</th>
<th>TMDU Group N=493</th>
<th>Chile Group n=1069</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male sex -- no. (%)</td>
<td>393 (25.1)</td>
<td>121 (24.5)</td>
<td>272 (25.4)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Median age</td>
<td>63</td>
<td>63</td>
<td>62</td>
<td>n.s.</td>
</tr>
<tr>
<td>Indication for colonoscopy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iFOBT positive alone</td>
<td>970</td>
<td>319</td>
<td>651</td>
<td>n.s.</td>
</tr>
<tr>
<td>Family history of CRC alone</td>
<td>516</td>
<td>147</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>76</td>
<td>27</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Median Boston Scale</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>n.s.</td>
</tr>
<tr>
<td>Complete colonoscopy (%)</td>
<td>1477 (94.6)</td>
<td>480 (97.4)</td>
<td>997 (93.3)</td>
<td>p=0.0009</td>
</tr>
<tr>
<td>Colonoscopy with adenoma or CRC (ADR, %)</td>
<td>668 (42.8)</td>
<td>224 (45.4)</td>
<td>445 (41.6)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Colonoscopy with CRC (%)</td>
<td>101 (6.4)</td>
<td>46 (9.33)</td>
<td>55 (5.14)</td>
<td>p=0.0018</td>
</tr>
</tbody>
</table>

Abbreviations: TMDU, Tokyo Medical and Dental University; iFOBT, immunochemical fecal occult blood test; CRC, colorectal cancer.
JICA-AGCID-CLC annual training project for Latin America

- Budget approval in 2014
- First training curse in August 2015
JICA-AGCID-CLC annual training project for Latin America

• To incorporate the colorectal cancer screening program in Latin America:

  TMDU-MINSAL- CLC

  • Annual training course in Clínica Las Condes
  • Open for LATAM endoscopist who would like to start a CCR screening
  • To invite two Health`s team from LATAM countries per year (12-14 people)
  • Training – support and follow-up in order to start the program
  • Budget for three years
JICA-AGCID-CLC annual training project for Latin America

- August 2015
  - COLOMBIA
    - Hospital Méderi - Universidad del Rosario
  - ECUADOR
    - Hospital Pablo Arturo Suarez

- August 2016
  - Posibles new countries:
    - Perú
    - Paraguay
    - Bolivia
Conclusions

• It is possible to start a multi centric CCR screening program based on public health institutions

• Prenec’s design allows health team support, continuous medical educations and motivations

• We are saving lives

• We are improving the endoscopic standard

• Most likely we are saving money

• A further cost benefit study will get stronger conclusions

• We are trying to support other LATAM countries