Impact of colorectal cancer screening on incidence and mortality in the Czech Republic

Suchanek S., Grega T., Ngo O., Majek O., L. Dusek L., Zavoral M

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Disclosure

• Nothing to disclose
CRC incidence and mortality international comparison

<table>
<thead>
<tr>
<th></th>
<th>INCIDENCE</th>
<th>MORTALITY</th>
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<tbody>
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<td><strong>Czech position</strong></td>
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<td>Europe</td>
<td>15.</td>
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CRC incidence and mortality
Czech Republic

1. long-lasting screening program
2. high availability of colonoscopy
3. high numbers of colonoscopy therapeutic procedures

INCIDENCE -21.1%
MORTALITY -40.1%
Czech National CRC screening program development

- 2000: initiation → biennial gFOBT (GPs)
- 2006: Preventive Colonoscopies Registry
- 2010: new design (FIT, screening colonoscopy)
- 2014: transition to population-based program
- 2019: National Registry of Reimbursed Health services (NRRHS)
Czech National CRC screening program current design

- age ≥ 50; asymptomatic, no family or personal CRC history
  - age 50 – 54: FIT annually → FIT+ colonoscopy
  - age ≥ 55: FIT biennially or screening colonoscopy (10 years interval)

- population-based program invitation:
  - general practitioners / gynecologists
    - semi-quantitative FIT (POCT) in office or quantitative FIT in laboratory
  - mail in non-responders
    - annual check-up in Health Insurance Companies databases → “birthday invitation”
Czech National CRC screening program
Preventive Colonoscopies Registry

- Centers for screening colonoscopy
- results in years 2006 – 2018:
  - 309,807 preventive colonoscopies
  - 112,923 adenomas (36.4 %)
  - 48,366 advanced adenomas (15.6 %)
  - 9,673 cancers (3.1 %)

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<thead>
<tr>
<th>Stage</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>Screening</td>
<td>44 %</td>
<td>21 %</td>
<td>25 %</td>
<td>11 %</td>
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<tr>
<td>All population</td>
<td>25 %</td>
<td>26 %</td>
<td>26 %</td>
<td>23 %</td>
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Preventive Colonoscopies Registry; National Cancer Registry
Czech National CRC screening program target population coverage (FOBT)

**OPPORTUNISTIC**

- gFOBT

**POPULATION-BASED**

- FIT screening colonoscopy

![Graph showing the years and percentages of target population coverage for CRC screening.](Health Insurance Companies Database)
CRC prevention related procedures
all colonoscopies

Endoscopic polypectomy in 24.6 %
CRC prevention related procedures

NRRHS structure

Individual data of all procedures reimbursed by Health Insurance Companies in years 2010 – 2017

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National Registry of Reimbursed Health Services
CRC prevention related procedures
NRRHS analyses

• procedures
  – preventive colonoscopies (FIT+, screening colonoscopy) & FIT
  – CRC relating procedures (diagnostic colonoscopy, diagnostic FIT)
  – age ≥ 50
  – years 2015 - 2017

• “reference procedure”
  – in case ≥ 1 procedure in one patient
  – screening CS > screening FIT / FIT+ CS > dgn. colonoscopy > dgn. FIT
  – in case reference procedure more than once → first procedure
CRC prevention related procedures

Target population age $\geq 50$
$4,056,641$

Total Coverage $50.9\%$

SCREENING PROCEDURES

- Screening colonoscopy $N = 36,387$
- Screening FIT (FIT+ colonoscopy) $N = 1,668,109$

0.9 %
41.1 %

DIAGNOSTIC PROCEDURES

- Diagnostic colonoscopy $N = 268,701$
- Diagnostic FIT $N = 90,487$

2.2 %
6.6 %

Years 2015 – 2017
CRC screening program
future steps

- individual data analyses
- screening colonoscopy:
  - lower age limit → 50 years
- colonoscopy quality control
  - ≥ 100 preventive colonoscopies
  - ADR (≥ 25 % all, ≥ 30 % men, ≥ 20 % women)
  - CIR ≥ 95 %
  - adequate bowel cleansing (BBPS) ≥ 90 %
Conclusion

• In the Czech Republic, there is a continuous trend in CRC incidence and mortality reduction
• The reason might be the long-lasting nationwide screening program and high colonoscopy availability
• The overall population coverage of CRC prevention related procedures reached 51 % in years 2015 - 2017
Acknowledgments

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Thank you for your attention