

Bianchi Valentina¹, Spitale Alessandra¹, Mazzucchelli Luca², Bordoni Andrea¹

and the **Colorectal Cancer Working Group** (Barizzi J, Bihl F, Christoforidis D, Franzetti-Pellanda A, Giovanella L,

Heinkel J, Maffe M, Mazzucchelli L, Miazza B, Pelloni A, Quattropani C, Rosso R, Saletti P, Valli MC, Varini M, Wyttenbach R)

¹ Ticino Cancer Registry, Institute of Pathology, Locarno

² Institute of Pathology, Locarno

INTRODUCTION

International studies on Quality of Cancer Care (QoCC) since the 90's showed a constant and continuous improvement of the delivered oncologic care and a consequent spread of the advanced specialist care on the territory. The most of the studies were developed on a regional basis as well as our project: this helps to increase the enrolment of the involved physicians and it shares a common basis about the sanitary laws and the territorial characteristics. The aims of the present study are to produce evidence-based quality indicators (QIs) of colorectal cancer, whose application could allow an immediate change in the diagnostic-treatment process, that could be translated in a short-term benefit for patients.

METHODS

The QC₃ project is a population-based, prospective study, implemented on a three-year time period (2011-2013) on the territory of Canton Ticino. From the Ticino Cancer Registry we extract the patients and the cases regarding the above considered pathologies, treated both in the regional public and private hospitals; we include in the study all the patients > 18 years old. Data about the cases included in the study are collected mainly from pathological reports and from patients' files. QIs are derived from a comprehensive literature search on PubMed/MEDLINE of relevant peer-reviewed articles. A first QIs selection is performed using a 2-step modified Delphi process, involving a dedicated working group of local health care providers to obtain expert opinions in a systematic, anonymous and individual validation. A second QIs selection is performed by an independent international multidisciplinary cancer-specific Advisory Board, in order to get an additional evaluation and to define a final approved list of QIs.

RESULTS

In **Tab. 1** we describe the characteristics of the CRC cases incident in 2011 (n=243). In **Tab. 2** is represented a selection of the final QIs. For each QI is described its own **denominator**, i.e. the population on whom the QI is calculated, the results expressed in **YES** (QIs satisfied), **NO** (QIs not satisfied) and **MISSING** (data not present in the whole medical documentation examined). Furthermore, for each QI is indicated the literature used to define it (G= guidelines; R= reviews; M= meta-analysis; PBS: population-based studies; CCS: case-control or cohort studies).

Tab. 1 – CRCs INCIDENT IN 2011

| Variable | Total N = 243 | COLON N = 167 (69%) | RECTUM N = 76 (31%) |
|--------------------------------------|------------------|------------------------|------------------------|
| Sex, N (%) | | | |
| Men | 129 (53.1%) | 84 (50.3%) | 46 (60.5%) |
| Women | 114 (46.9%) | 83 (49.7%) | 30 (39.5%) |
| Age | | | |
| averagesd (yrs) | 72±12 | 73±11 | 71±14 |
| median | 74 | 74 | 74 |
| Age-specific group, N (%) | | | |
| 0-49 | 10 (4.1%) | 3 (1.8%) | 7 (9.2%) |
| 50-59 | 25 (10.3%) | 15 (9.0%) | 10 (13.2%) |
| 60-69 | 56 (23.0%) | 45 (26.9%) | 11 (14.5%) |
| 70-79 | 79 (32.5%) | 56 (33.6%) | 23 (30.3%) |
| >80+ | 73 (30.1%) | 48 (28.7%) | 25 (32.8%) |
| Age-specific group, N (%) | | | |
| <70 | 91 (37.4%) | 63 (37.7%) | 28 (36.8%) |
| ≥70 | 152 (62.6%) | 104 (62.3%) | 48 (63.2%) |
| Tumoral localization ICD O II | | | |
| 18.00 caecum | 29 (11.9%) | 29 (17.4%) | 0 |
| 18.20 ascending colon | 33 (13.6%) | 33 (19.8%) | 0 |
| 18.30 hepatic flexure | 7 (2.9%) | 7 (4.2%) | 0 |
| 18.40 transverse colon | 18 (7.4%) | 18 (10.8%) | 0 |
| 18.50 splenic flexure | 10 (4.1%) | 10 (6.0%) | 0 |
| 18.60 descending colon | 16 (6.6%) | 16 (9.6%) | 0 |
| 18.70 sigma | 50 (20.6%) | 50 (29.8%) | 0 |
| 18.80 overlapping lesion | 2 (0.8%) | 2 (1.2%) | 0 |
| 18.90 colon, NOS | 2 (0.8%) | 2 (1.2%) | 0 |
| 20.90 rectal ampulla, NOS | 6 (2.5%) | 0 | 6 (7.9%) |
| 20.91 distal rectum (4-7.5 cm) | 28 (11.5%) | 0 | 28 (36.8%) |
| 20.92 medium rectum (7.5-12 cm) | 7 (2.9%) | 0 | 7 (9.2%) |
| 20.93 low rectum (>12 cm) | 26 (10.7%) | 0 | 26 (34.3%) |
| 20.94 medium-low rectum, NOS | 3 (1.2%) | 0 | 3 (3.9%) |
| 20.95 distal-medium rectum, NOS | 6 (2.5%) | 0 | 6 (7.9%) |
| Histological type | | | |
| adenocarcinoma | 225 (92.6%) | 153 (91.6%) | 72 (94.7%) |
| mucinous carcinoma | 1 (0.4%) | 1 (0.6%) | 0 (0.0%) |
| signet-cell ring carcinoma | 15 (6.2%) | 11 (6.6%) | 4 (5.3%) |
| carcinoma NOS | 2 (0.8%) | 2 (1.2%) | 0 (0.0%) |

Tab. 2 – CRCs INCIDENT IN 2011 – PRELIMINARY QC₃ QIs SELECTION

| QUALITY INDICATORS (QI) | DENOMINATORS | RESULTS | LITERATURE |
|--|---|--|----------------|
| Proportion of patients evaluated by preoperative colonoscopy | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 172 (86%) No: 17 (8%) Missing: 11 | CCS, R, G |
| Proportion of patients with preoperative staging according to the AJCC TNM 7 th ed. | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 126 (63%) No: 9 (4%) Missing: 66 | G |
| Proportion of patients undergoing rectal-sigmoidoscopy/colonoscopy | Patients with rectal cancer (n=76) | Yes: 68 (90%) No: 3 (4%) Missing: 5 | P, CCS, R, M |
| Proportion of patients undergoing biopsy | Patients with rectal cancer (n=76) | Yes: 65 (86%) No: 5 (7%) Missing: 6 | P, CCS, R, M |
| Proportion of patients with description of the clinical-endoscopic visit, particularly of the tumour localization (distance ab ano) | Patients with rectal cancer (n=76) | Yes: 60 (79%) No: 11 (15%) Missing: 5 | CCS, R |
| Proportion of patients with definitive pathological report including the number of lymph nodes retrieved | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 196 (98%) No: 1 (0.5%) Missing: 3 | CCS, R, G, PBS |
| Proportion of patients with definitive pathological report including the margin status | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 196 (98%) No: 1 (0.5%) Missing: 3 | G |
| Proportion of patients with definitive pathological report including the pTNM classification | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 193 (97%) No: 4 (2%) Missing: 3 | CCS, G |
| Proportion of patients operated on with free margins | Patients with colorectal cancer undergoing surgery (n=200) | Yes: 8 (4%) No: 188 (94%) Missing: 4 | CCS, G, M |
| Proportion of patients NOT undergoing neo-adjuvant RT or RT-CT, with a number of resected lymph nodes ≥ 12 | Patients with colon cancer and patients with rectal cancer undergoing primary surgery (n=183) | Yes: 148 (81%) No: 32 (18%) Missing: 3 | CCS, R, G, PBS |
| Proportion of patients with clinical stage from I (T2N0M0) to III (every T>N1-2M0) undergoing an extensive surgical resection with anastomosis | Patients with AJCC stage I (from T2N0M0) - III colorectal cancer (n=173) | Yes: 171 (99%) No: 1 (0.6%) Missing: 1 | G |
| Proportion of patients with locally advanced tumours undergoing neo-adjuvant RT±CT | Patients with locally advanced rectal cancer (n=24) | Yes: 17 (71%) No: 6 (25%) Missing: 1 | CCS, R, G |

CONCLUSIONS

The study is instrumental to draw a population-based picture of the QoCC currently in use in the territory of Canton Ticino and to open new perspectives on quality-related issues in oncology. The prospective design allows the production of up-to-date results, reproducing the currently used pattern of care. The population-based design implies the inclusion of the elderly patients usually excluded from randomized clinical trials. Moreover, in a second step, for each QI the *minimum* and the *target requirement* at a regional level will be proposed.