Quality Indicators in Radiation Therapy for Rectal Cancer

A population-based study in Southern Switzerland

V. Bianchi Galdi, A. Franzetti-Pellanda, A. Spitale, M.C. Valli, L. Ortelli, P. Mazzola, S. Peverelli, L. Mazzucchelli, A. Bordoni

Cantonal Institute of Pathology, Ticino Cancer Registry

Locarno, Switzerland

QC_3 (Quality of Clinical Cancer Care)

- **1st QoCC study in Switzerland**
- **Prospective study**
- **Population-based study setting (339.946 inh., 31.12.2010)**
- **To be conducted on a 3-year time period (01.01.2011-31.12.2013)**

Fundings:

Project KFS 02668-08-2010 OncoSuisse
Swiss Academy of Medical Science (Lung tumors, 2012-2013)
Zonta Club of Locarno (Gynaecological tumors)
ABREOC 10/2010

Tumors studied:

- **Colon/rectum (~ 220 pts/year)**
- **Prostate (~240 pts/year)**
- **Ovary/Uterus (~70 pts/year)**
- **Lung (~200 pts/year)**

References:

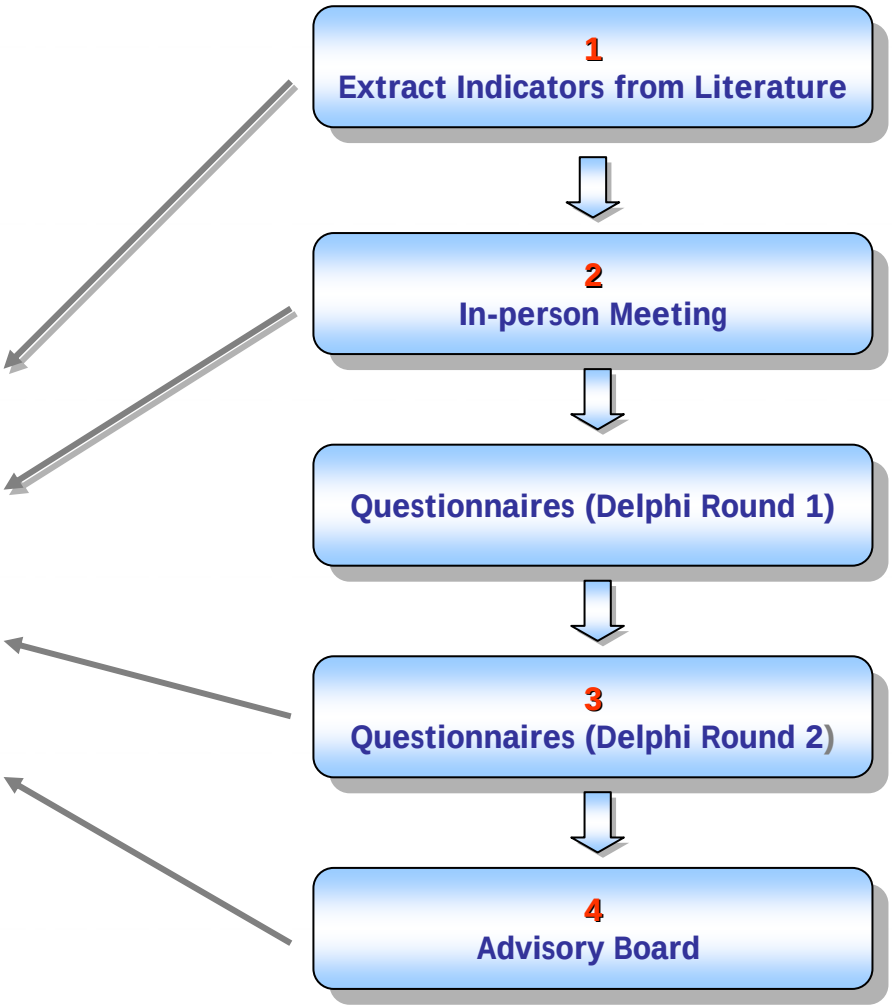
- **State of the Art**
- **ESMO Guidelines**
- **NCCN Guidelines**
- **CAP Guidelines**
- **EAU Guidelines**

Aim of the study

- to **measure and report on QoCC, by specific indicators**, of five tumour localizations: colon-rectum, prostate, ovary, endometrium and lung;
- to **define and implement standards of care**, based on the evidence-based medicine of diagnostic and treatment modalities, for each QoCC measure, in terms of *minimum and target requirements*;
- to promote a **culture of QoCC** among health care providers;
- to obtain in the long term **improved patient outcomes**.

CRC QI selection process

N	CRC QI
1	149
2	104
3	89
4	74



QC_3 CRC Working Group

Dr. med. J. Barizzi
PD Dr. med. F. Bihl
Dr. med. D. Christoforidis
Dr. med. A. Franzetti-Pellanda
PD Dr. med. L. Giovanella
Dr. med. J. Heinkel
Dr. med. M. Maffei
Prof. Dr. med. L. Mazzucchelli
Dr. med. B. Miazza
Dr. med. A. Pelloni
Dr. med. C. Quattropani
Prof. Dr. med. R. Rosso
Dr. med. P. Saletti
Dr. med. M.C. Valli
Dr. med. M. Varini
Prof. Dr. med. R. Wyttenbach

QC_3 CRC Advisory Board

Prof. Dr. med. Phil Quirke, Leeds
Prof. Dr. med. Roberto Labianca, Bergamo
Prof. Dr. med. Gian Dorta, Losanna
Prof. Dr. med. Emmanuel Tiret, Parigi
Prof. Dr. med. Dominik Weishaupt, Zurigo
Prof. Dr. med. Vincenzo Valentini, Roma
Prof. Dr. med. Stefano Fanti, Bologna
Prof. Dr. med. Jean Faivre, Dijon Cedex
Prof. Dr. med. Franco Cavalli, Bellinzona
Prof. Dr. med. Sebastiano Martinoli, Lugano

TREATMENT

Proportion of patients with Locally Advanced Rectal Cancer (T3/T4 and/or N+ and M0) undergoing neo-adjuvant Radiotherapy (RT) ± Chemotherapy (ChT)

$$QI = \frac{\text{Proportion of patients undergoing neo-adjuvant RT±CT (N= 35)}}{\text{Patients affected by locally advanced rectal cancer undergoing surgery (N=57)}}$$

LARC (n=64; 55.2%)	
Age mean±SD (median)	67.8±13.5 (69.5)
Gender	
Males	31 (48.4%)
Age: mean±SD (median)	68.1±12.9 (69)
Females	33 (51.6%)
Age: mean±SD (median)	67.5±14.2 (70)

	N	%	IC95%
YES	35	61.4	48.8%;74%
NO	22	38.6	26%;51.2%
MISSING	0		

Pts undergoing surgery (n=57; 89.1%)	
Age mean±SD (median)	67.4±11.9 (69)
Gender	
Males	27 (47.4%)
Age: mean±SD (median)	68.9±10.4 (69)
Females	30 (53.6%)
Age: mean±SD (median)	66.1±13.4 (69.5)

In other countries…

- **83%** in The Netherlands (2006-2008) (!!All the stages!!) *[Swellengreble HA et al. World J Surg. 2011 Sep;35(9):2125-33]*
- **73%** in Florida (2006) (!!T3 and/or N+!!) *[Siegel EM et al. Journal of Oncology Practice 2012;8:239-49]*
- **61%** in Canton Ticino (CH) (2002-2007) *[Spitale A et al. Eur J Cancer Prev. 2012 Mar;21(2):139-46]*
- **24%** in Canada (2002-2005) *[Eldin NS et al. Clin Oncol (R Coll Radiol). 2012 Feb;24(1):e9-17]*
- **13%** in Italy (2000-2007) (!!All the stages!!) *[Sacerdote C et al. BMC Public Health. 2012 Sep 12;12(1):775]*

PATHOLOGY: pre-analytical QI

Proportion of patients with rectal cancer for which the request for the pathological examination includes the information of neo-adjuvant RT±ChT

$$QI = \frac{\text{Proportion of patients with info about neo-adjuvant RT±ChT (N=30)}}{\text{Patients with rectal cancer undergoing neo-adjuvant RT±ChT and surgery (N=35)}}$$

	N	%	IC95%
YES	30	85.7	74.1%;97.3%
NO	5	14.3	2.7%;25.9%
MISSING	0		

LITERATURE (neo-adjuvant treatment response)

- *Ruo L et al. Ann Surg 2002;236:75-81*
- *Gavioli M et al. Dis Colon Rectum 2005;48:1851-57*
- *Ryan R et al. Histopathology 2005;47:141-6*
- *Park IJ et al. J Clin Oncol 2012;30:1770-6*
- *Beddy D et al. Ann Surg oncol 2008;15:3471-7*
- *MacGregor TP et al. J Clin Pathol 2012;65:867-71*
- *Washington MK et al. Arch Pathol lab Med 2008;132:1182-84*
- *Hermanek P et al. Anticancer Res 2013;33:559-66*

Data around the world…

- **27%** discrepant or missing infos *[Nakhleh RE et al. Arch pathol Lab Med 1996;120:227-33]*
- **11%** clinical infos missing *[Nakhleh RE et al. Arch pathol Lab Med 1999;123:615-19]*

TREATMENT

Proportion of patients with rectal cancer undergoing surgery within 6-8 weeks after the end of neo-adjuvant RT±ChT

$$QI = \frac{\text{Proportion of patients undergoing surgery in 6-8 wks. from RT±ChT (N=31)}}{\text{Patients undergoing RT±ChT and surgery (N=35)}}$$

	N	%	IC95%
YES	31	88.6	78%;99.1%
NO	4	11.4	0.9%;22%
MISSING	0		

LITERATURE

Glimelius B et al. Ann Oncol 2010;21:82-6

Lim SB et al. Ann Surg 2008;248:243-51

Kerr SF et al. Br J Surg 2008;95:1534-40

Sloot haak DA Br J Surg 2013;Mar 27. doi:10.1002/bjs.9112

Garcia-Aguilar J et al. Ann Surg 2011;254:97-102

Elwanis MA et al. World J Surg Oncol 2009;7:52

Fernanez-Martos C et al. Drugs 2012;72:1057-73

In the other countries…

- **NO AVAILABLE DATA about this indicator**
- **Range for timing to surgery: 4 weeks** *(Elwani)* → **11 weeks** *(Sloothaak)*

Conclusions

- The QC_3 study will produce **up-to-date quality indicators and results,** allowing an **immediate change** in the diagnostic-treatment process, that could be translated in a **short-term benefit for patients** (without waiting years for results)

- The QC_3 study is based on **expertise and active involvement of local health care providers representing all major disciplines (**epidemiology, statistic and clinical experts in pathology, radiology, surgery, radio-oncology, oncology), **thus increasing quality, acceptance and translation of results into the daily clinical practice**

- The QC_3 study is **population-based (no upper limit for age)** and concerns both **public and private settings**, ensuring so a **real description of a regional care system** without selection bias and results will be useful and comparable as **target value for other similar studies at the national and international level**

- The QC_3 study is a **long-term study**, so permitting **trend analysis of quality indicators** and the **evaluation of other cancer sites**

Acknowledgements

Financial Sponsors:

Oncosuisse

Zonta Club Locarno

Swiss Academy of Medical Science

Ente Ospedaliero Cantonale

Repubblica e cantone Ticino

CRC Working Group

Dr. med. J. Barizzi
PD Dr. med. F. Bihl
Dr. med. D. Christoforidis
Dr. med. A. Franzetti-Pellanda
PD Dr. med. L. Giovanella
Dr. med. J. Heinkel
Dr. med. M. Maffei
Prof. Dr. med. L. Mazzucchelli
Dr. med. B. Miazza
Dr. med. A. Pelloni
Dr. med. C. Quattropani
Prof. Dr. med. R. Rosso
Dr. med. P. Saletti
Dr. med. M.C. Valli
Dr. med. M. Varini
Prof. Dr. med. R. Wyttenbach

CRC Advisory Board

Prof. Dr. med. Phil Quirke, Leeds, UK
Prof. Dr. med. Roberto Labianca, Bergamo, Italy
Prof. Dr. med. Gian Dorta, Lausanne, switzerland
Prof. Dr. med. Emmanuel Tiret, Paris, France
Prof. Dr. med. Dominik Weishaupt, Zürich, Switzerland
Prof. Dr. med. Vincenzo Valentini, Rome, Italy
Prof. Dr. med. Stefano Fanti, Bologna, Italy
Prof. Dr. med. Jean Faivre, Dijon Cedex, France
Prof. Dr. med. Franco Cavalli, Bellinzona, Switzerland
Prof. Dr. med. Sebastiano Martinoli, Lugano, Switzerland

QC3 Qualità delle cure nella lotta contro il cancro
Registro Tumori Canton Ticino