

# Marco Krengli

## *Curriculum vitae*

### PERSONAL DATA

Born in Novara (NO); date of birth 25.4.1957

Living in Novara (NO)

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### BIO AND EDUCATION

From 1976 to 1982, I attended the Medical School in Turin, Italy. Afterwards, I achieved post-graduations and Italian board certifications in Oncology (1982-1985, University of Pavia), in Radiotherapy (1985-1989, University of Modena) and in Radiology (1990-1992, University of Turin).

In 1995-1996, I was Research Fellow at the Department of Radiation Oncology del Massachusetts General Hospital - Harvard Medical School, Boston, USA and I was involved in proton beam radiotherapy projects and clinical activity.

I performed also stages in France (1993, Centre G.F. Leclerc in Dijon), Switzerland (1994, Service de Radio-Oncologie, CHUV in Lausanne) and Spain (2004, Hospital Gregorio Maranon in Madrid).

Since 1998, I have been appointed Chief of the Radiation Oncology Division of the University Hospital "Maggiore della Carità" in Novara.

### UNIVERSITY CAREER

2006-	Full Professor, University of Piemonte Orientale
1998-2006	Associate Professor, University of Piemonte Orientale
1996-1998	Assistant Professor, University of Turin
1995-1996	Research Fellow, Harvard Medical School, Boston, MA, USA
1988-1995	Radiation Oncologist, Hospital Maggiore della Carità, Novara

### UNIVERSITY POSITIONS

2016-	Member of the Discipline Committee, University of Piemonte Orientale
2012-2014	Vice-president of Medical School, University of Piemonte Orientale
2007-	President of the "Commissione Tecnica di Programmazione Didattico-Pedagogica" of the Course for Medical Students, University of Piemonte Orientale
2007-	President of the Course for Medical Students, University of Piemonte Orientale
2004-	Director of the Residency Program for Radiotherapy, University of Piemonte Orientale

2000-2005	Member of the Administrative Board, University of Piemonte Orientale
1999-2003	Director of the Residency Program for Radiology, University of Piemonte Orientale

### SCIENTIFIC POSITIONS

2015-	Chairman of the Study Group for Brain Tumours of the Associazione Italiana Radioterapia Oncologica (AIRO)
2014-	Member of the Board of Rare Cancer Network (RCN)
2014-	President of the International Society of Intraoperative Radiation Therapy (ISIORT)
2014-	Membro dell'International Advisory Board del Progetto MEDAUSTRON (Austria)
2011-	Member of the Board of the International Society of Intraoperative Radiation Therapy (ISIORT)
2011-	Scientific Consultant at the Centro Nazionale di Adroterapia Oncologica (CNAO)
2010-2012	President of the Società Italiana del Basicranio (SIB)
2010-2011	Chairman of the Inter-Regional Group of the Associazione Italiana Radioterapia Oncologica (AIRO) Piemonte-Valle d'Aosta-Liguria
2008-2010	Member of the Board of the Associazione Italiana Radiobiologia (AIRB)
2007-	Member of the Technical-Scientific Committee of the Foundation Centro Nazionale di Adroterapia Oncologica (CNAO)
2007-	Member of the Board of the Società Italiana del Basicranio (SIB)
2005-2007	Member of the Advisory Scientific Board of the Project for Protontherapy of the Provincia Autonoma of Trento (ATreP)
2004-2006	Member of the Board of the Associazione Italiana Radioterapia Oncologica (AIRO)

### MAIN FIELDS OF INTEREST

1. Image-guided radiotherapy
2. Integration of radiotherapy-chemotherapy/targeted therapy
3. Imaging for radiotherapy
4. Radiotherapy with protons and ions
5. Intra-operative Radiotherapy

### CURRENT ISSUES OF RESEARCH

#### 1. Intraoperative Radiotherapy (IORT) in locally advanced prostate cancer

The purpose is to describe technical feasibility and clinical results of IORT for locally advanced prostate cancer. 97 patients were analyzed. After surgical prostate exposure, IORT was delivered by electrons of 9-12 MeV to a total dose of 12 Gy. IORT was followed by radical prostatectomy, lymph node dissection and postoperative RT (50 Gy). After 70 months median follow-up, actuarial

biochemical free survival was 60% at 5 years for the whole series and 81% and 55% for the high and very high risk classes, respectively. No macroscopic failure in the prostate surgical bed was observed.

## 2. Surface imaging in external beam radiotherapy

Quality assurance procedures by using "surface imaging" were implemented to analyze setup correctness and intra-fraction motion in external beam radiotherapy. Pelvic and breast cancer series were analyzed. Respiratory Gating procedures are also planned for left sided breast cancer and intra-thoracic tumors.

## 3. Analysis of the clinical risk in Radiotherapy (ACCIRAD Project)

Data from the Countries of the European Community about the implementation of safety measures to reduce clinical risk in external beam radiotherapy were analyzed. Guidelines and recommendations are reported to implement methods for proactive and retrospective analysis and reporting of accidental and unintended exposures.

## 4. Proton and Carbon Ion radiotherapy at the Centro Nazionale Adroterapia Oncologica (CNAO) for skull base chordoma

79 patients (49 males, 30 females, median age 60 years, range 14-81) with histologically proven skull base chordomas were treated at National Center for Hadrontherapy (CNAO) with proton or carbon ion radiotherapy and spot scanning technology. The median follow-up time was 20 months (range, 6 - 43 months). Local control rate was 89.8 %. Radiation-induced pituitary dysfunction was observed in 6 (7.5%) patients (CTCAE Grade 2), temporal lobe radionecrosis G2 was found in 11 patients (13.9%)

## 5. Intraoperative Radiotherapy: the ISORT Registry

The purpose of the present analysis was to analyse the main clinical and technical variables of IORT. 10,675 IORT procedures have been analyzed from 42 centres. Treatments were curative in 98.2% of the cases. The most frequent tumour was breast cancer (75.6%) followed by rectal cancer (8.6%), soft tissue and bone sarcomas with 345 cases (3.2%) and prostate cancer (1.5%).

### CURRENT FUNDED PROJECTS

PROGRAMME	FUNDED PROJECT
EC	ACCIRAD – <u>“Guidelines on risk analysis of accidental and unintended exposures in radiotherapy”</u> <a href="http://www.accirad.eu/">www.accirad.eu/</a>
EC	ULICE – <u>“Union of Light Ion Centres in Europe”</u> <a href="http://cern.ch/ULICE">cern.ch/ULICE</a>

## TOP FIVE PAPERS

1. **Krengli M**, Hug EB, Adams JA, Smith AR, Tarbell NJ, Munzenrider JE. Proton radiation therapy for retinoblastoma: comparison of various intraocular tumor locations and beam arrangements. *Int J Radiat Oncol Biol Phys*, 61: 583-593, 2005
2. **Krengli M**, Masini L, Kaanders JHAM, Maingon P, Oei SB, Zouhair A, Ozyar E, Roelandts M, Amichetti M, Bosset M, Mirimanoff RO. Radiotherapy in the treatment of mucosal melanoma of the upper aero-digestive tract. A rare cancer network study. *Int J Radiat Oncol Biol Phys*, 65: 751-759, 2006
3. Bassi MC, Turri L, Sacchetti G, Loi G, Cannillo B, La Mattina P, Brambilla M, Inglese E, **Krengli M**. FDG-PET/CT imaging for staging and target volume delineation in preoperative conformal radiotherapy of rectal cancer. *Int J Radiat Oncol Biol Phys*. 70: 1423-1426, 2008
4. **Krengli M**, Terrone C, Ballarè A, Loi G, Tarabuzzi R, Marchioro G, Beldì D, Mones E, Bolchini C, Volpe A, Frea B. Intra-operative radiotherapy (IORT) during radical prostatectomy for locally advanced prostate cancer: technical and dosimetrical aspects. *Int J Radiat Oncol Biol Phys*. 76: 1073-1077, 2010
5. Terrazzino S, La Mattina P, Gambaro G, Masini L, Franco P, Canonico PL, Genazzani AA, **Krengli M**. Common variants of GSTP1, GSTA1 e TGFβ1 are associated with the risk of radiation-induced fibrosis in breast cancer patients. *Int J Radiat Oncol Biol Phys*, 83: 504-511, 2012

## AWARDS

1. Carl Zeiss Award of Excellence for Outstanding Clinical Research in IORT
2. Marquis' Who's Who in Medicine and Healthcare
3. Marquis' Who's Who in the World

## FURTHER INFORMATION

Teaching in the courses for Medical students, for Radiation Technologists and for Nurses (Medicina e Chirurgia, Tecniche di Radiologia Medica per immagini e Radioterapia e Scienze Infermieristiche ed Ostetriche) at the University of Piemonte Orientale.

Faculty of ESTRO course "Particle Therapy" and AIRO course "Radioterapia Intraoperatoria".

Collaboration to the CME programma of the Ministero della Salute.

Reviewer of PRIN and FIRB Projects.

Reviewer ANVUR VQR (2004-2010 and 2011-2014).

"Esperto Disciplinare di Valutazione" (II level) ANVUR with experience of site visits.