

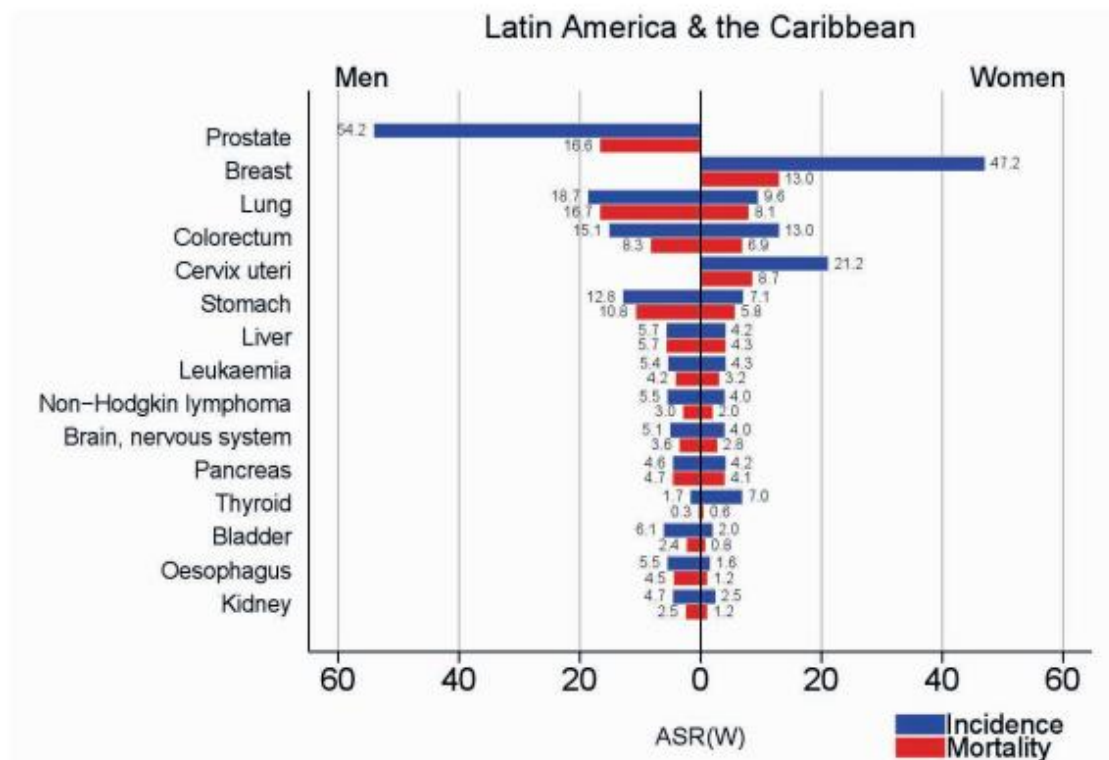
# Elekta Brachytherapy in Latin America

Jan De Becker  
Elekta Brachytherapy

# Gynecologic Cancer InterGroup Cervix Cancer Research Network



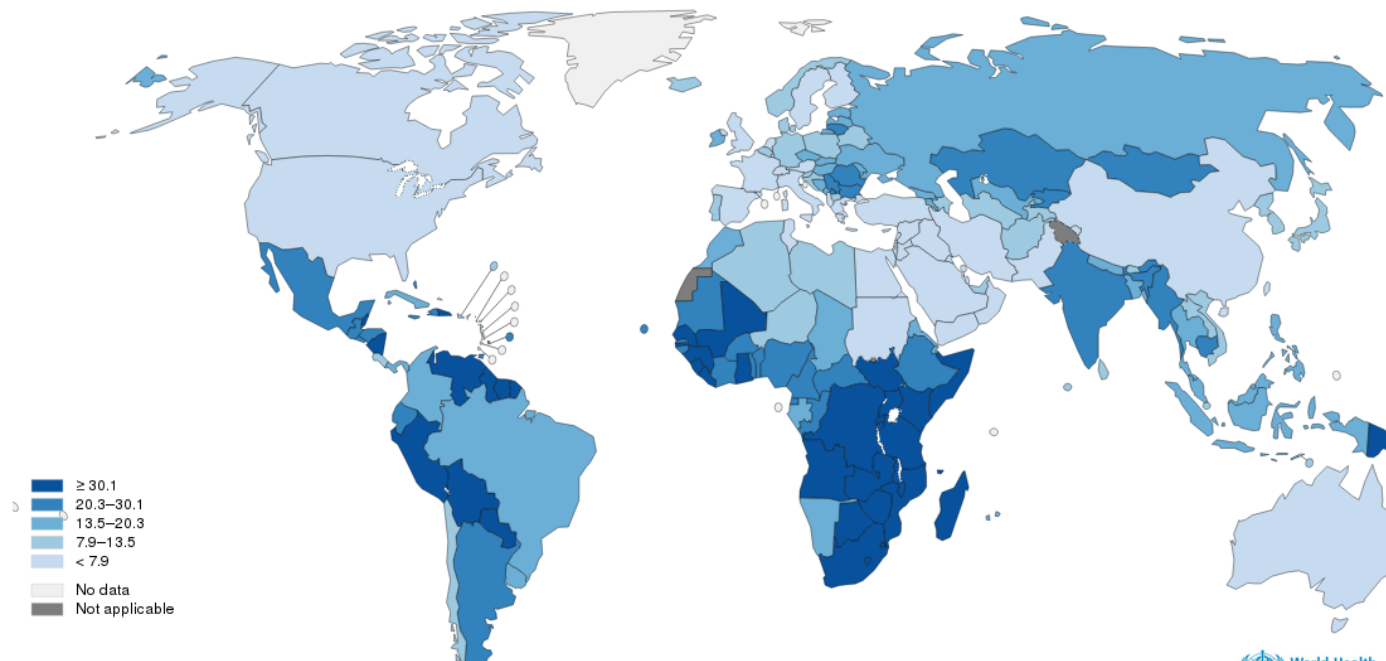
Fig. 1.1.26. Latin America and the Caribbean. Estimated age-standardized (World) cancer incidence and mortality rates (ASR) per 100 000, by major sites, in men and women, 2012.



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## Cervical Cancer Incidence

Estimated age-standardized rates (World) of incidence cases, females, cervical cancer, worldwide in 2012



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Data source: GLOBOCAN 2012  
Map production: IARC  
(<http://gco.iarc.fr/today>)  
World Health Organization

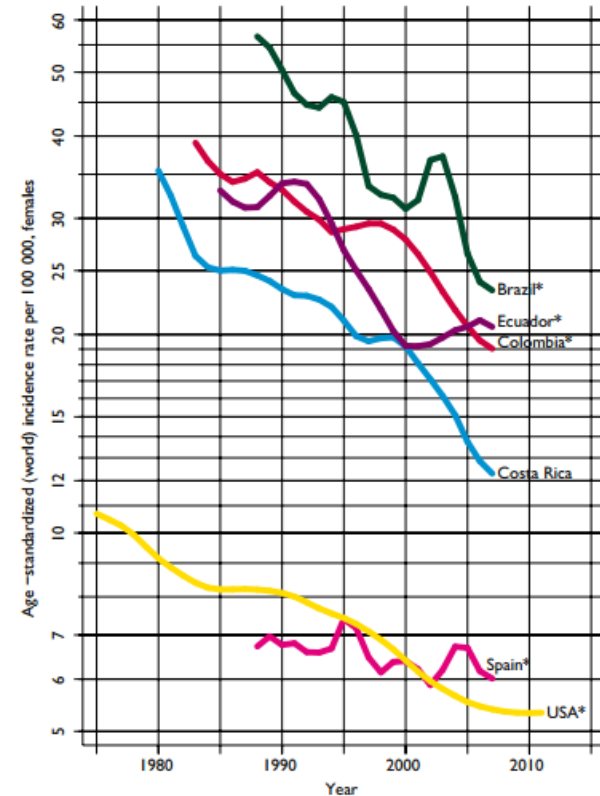


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Cancer 2017

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## Cervical Cancer Incidence

From: BRAY, Freddie and PINEROS, Marion. Cancer patterns, trends and projections in Latin America and the Caribbean: a global context. *Salud pública Méx* [online]. 2016, vol.58, n.2 [cited 2017-01-17], pp.104-117.



\* Regional registries

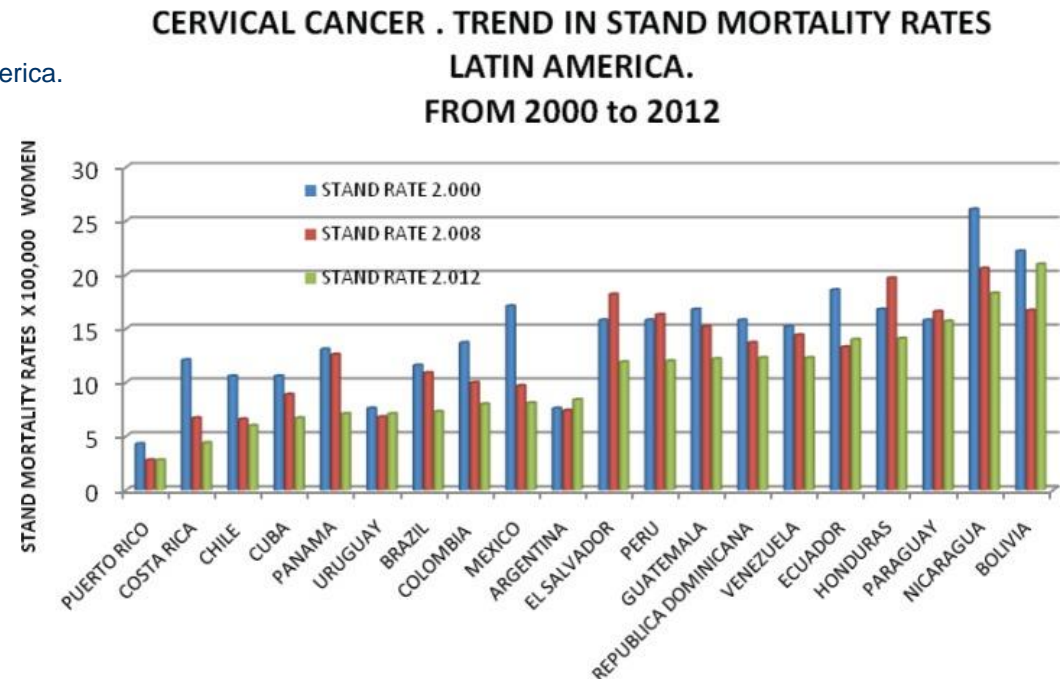
Source: IARC-CI5 Series

**FIGURE 9. TRENDS IN CERVICAL CANCER INCIDENCE RATES (ASR PER 100 000)**

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## Cervical Cancer Mortality

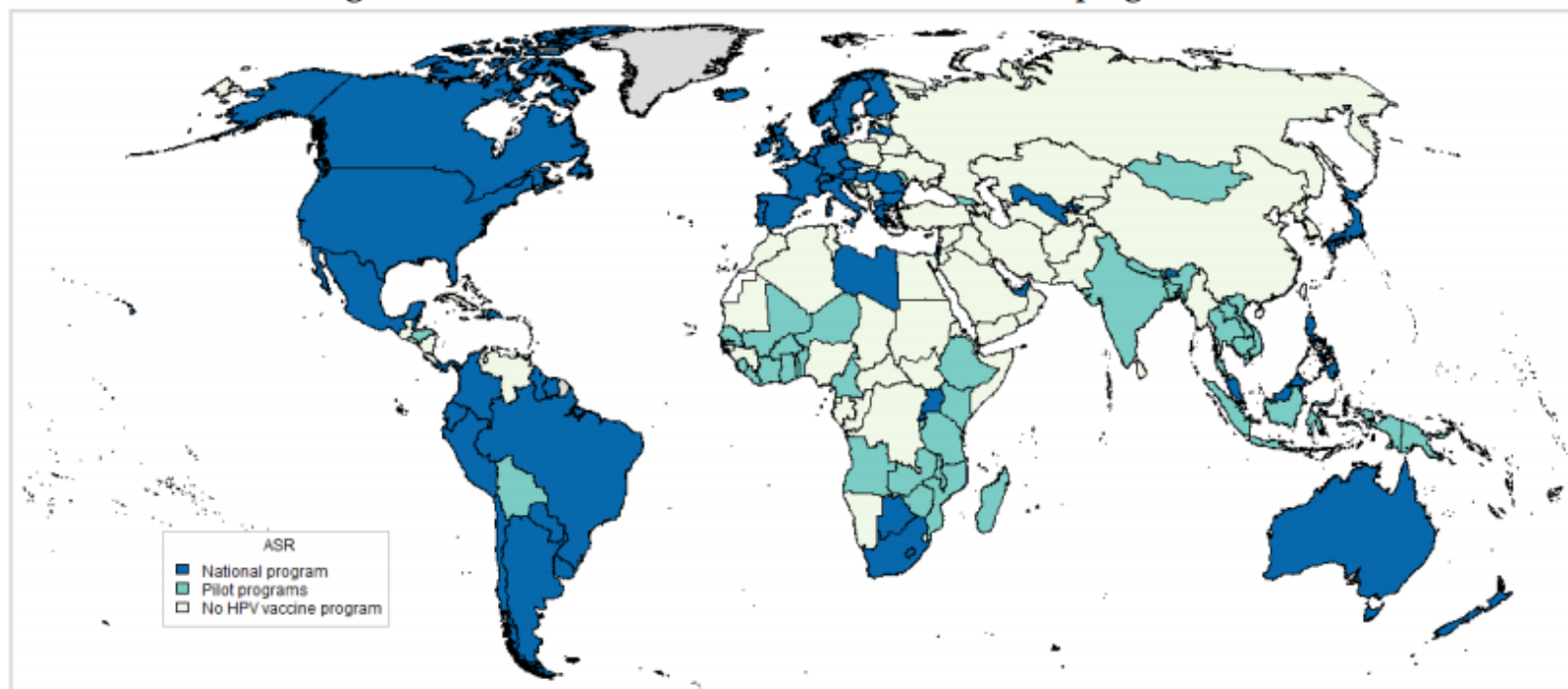
From: Negrin, Epidemiology of cervical cancer in Latin America.  
Ecanermedicalscience, 2015;9:577.



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## HPV Vaccination

Figure 131: Worldwide status of HPV vaccination programmes



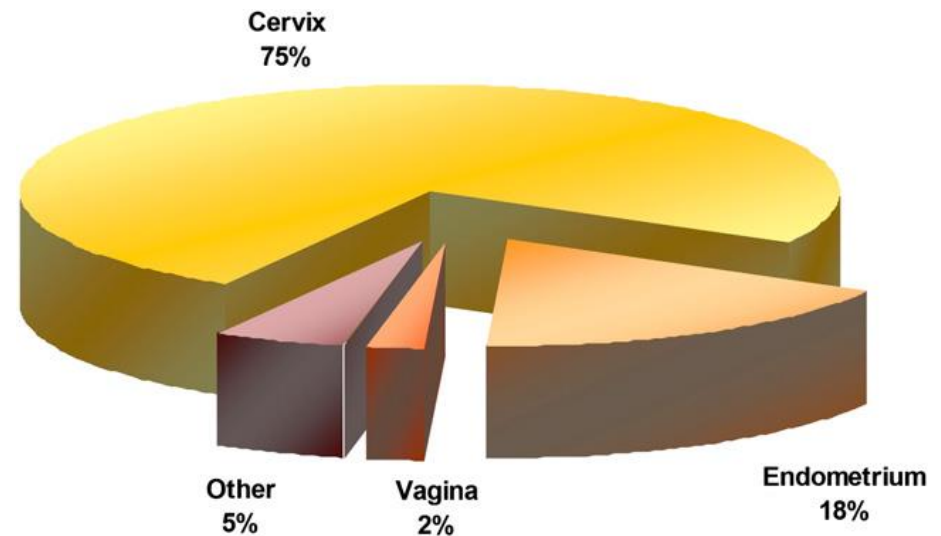
**Data accessed on 15 Nov 2015.**

**Data sources:** Cervical Cancer Action: a global Coalition to stop Cervical Cancer (CCa). Progress In Cervical Cancer Prevention: The CCA Report card. Update August 2015, available at <http://www.cervicalcanceraction.org/pubs/pubs.php>. Annual WHO/UNICEF Joint Reporting Form (Update of 2015/July/15). Geneva, Immunization, Vaccines and Biologicals (IVB), World Health Organization. Available at: [http://www.who.int/immunization/monitoring\\_surveillance/en/](http://www.who.int/immunization/monitoring_surveillance/en/) Markowitz LE, Tsu V, Deeks SL, Cubie H, Wang SA, Vicari AS, Brotherton JM. Human papillomavirus vaccine introduction—the first five years. *Vaccine*. 2012 Nov 20;30 Suppl 5:F139-48.

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## Brachytherapy in LatAm

From: Guedea et al Brachytherapy 10 (2011) 363-368



Distribution of cases by localization

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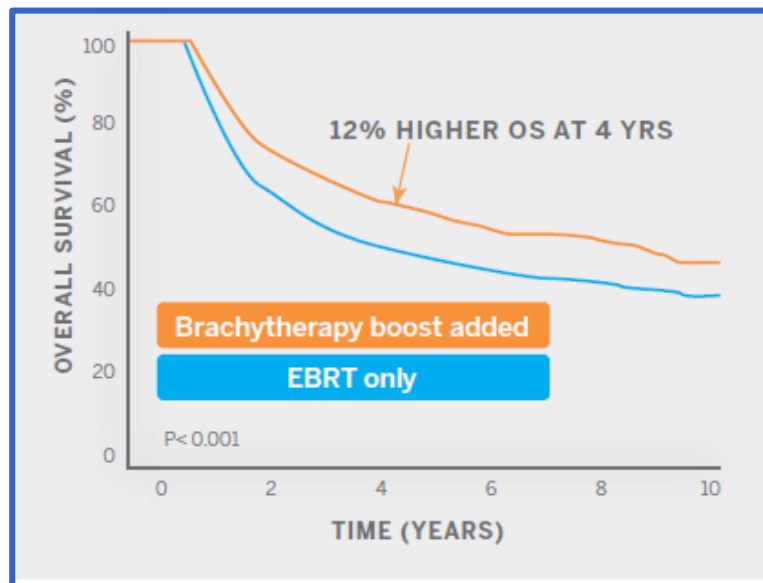
## Trends in GYN Brachytherapy

- Treatment Regimen and Competing Modalities
  - The Need of Brachytherapy
- 3D Image Guided Adaptive Brachytherapy
  - Supported by Clinical Outcome
  - Guidelines and recommendations
- Interstitial Brachytherapy
  - Growing Need



# Brachytherapy

Essential part in treatment of cervical cancer



In a recent study, cervical cancer patients that received brachytherapy as boost after external beam radiation therapy had a 12% better overall survival rate at four years than patients who didn't receive the brachytherapy boost.<sup>1</sup>

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## 3D IGABT

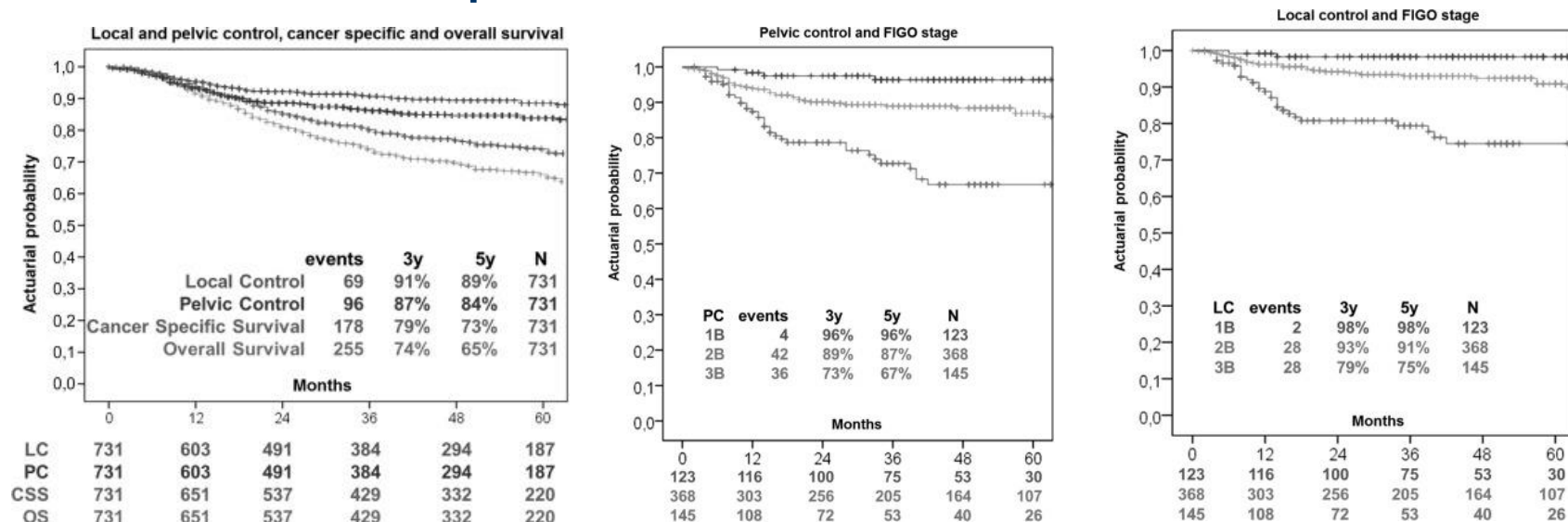
- 3D Imaging (CT or MRI) with the applicator inserted
- Applicator Reconstruction on 3D Data
- Contouring
  - HR- CTV: High Risk Clinical Target Volume
  - IR-CT: Intermediate Risk Clinical Target Volume
  - OAR: Organs At Risk
    - Bladder
    - Rectum
    - Sigmoid
- Dose plan adapted to the patients' case

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## 3D IGABT Improves Clinical Outcome



### RetroEMBRACE Multi-center Study

IGBT improves pelvic control by approximately 10% compared to conventional 2D BT. [1]

IGBT improves overall survival compared to historical data [1] [8] [9]

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## 3D IGABT Improves Clinical Outcome

<b>RetroEMBRACE</b>			
FIGO stage	Total number of patients	Overall Survival at 5 years	Cancer Specific Survival at 5 years
IB	123	83%	90%
IIA	42	80%	84%
IIB	368	70%	77%
IIIA	23	42%	48%
IIIB	145	42%	53%
IVA	23	32%	40%
<b>Total</b>	<b>731</b>	<b>65%</b>	<b>73%</b>

[1] Sturdza et al, Radiother Oncol. 2016

FIGO Stage	5-Year Observed Survival Rate
0	93%
IA	93%
IB	80%
IIA	63%
IIB	58%
IIIA	35%
IIIB	32%
IVA	16%
IVB	15%

Based on data collected by the USA National Cancer Data Base from people diagnosed between 2000 and 2002

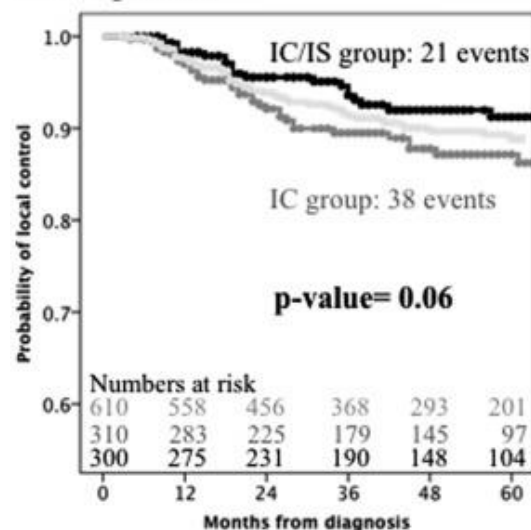
The above mentioned figures are not fully comparable.

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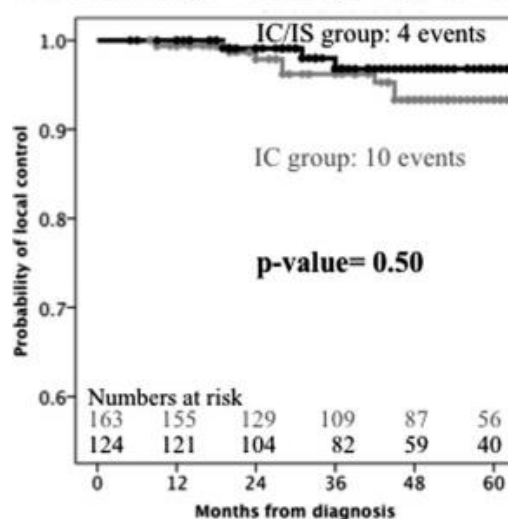


## 3D IGABT with interstitial needles improves Local Control

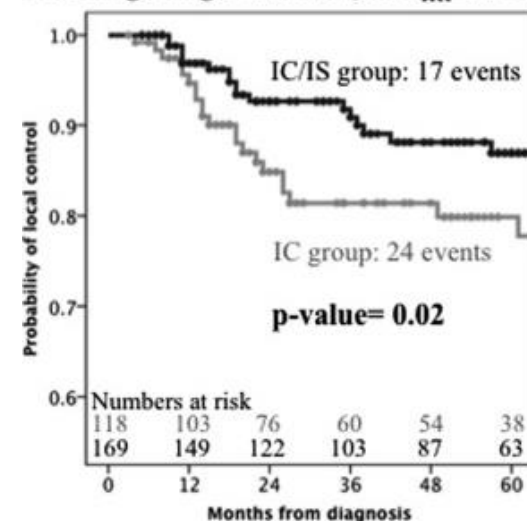
2A. All patients



2C. Small target volume ( $CTV_{HR} < 30 \text{ cm}^3$ )



2B. Large target volume ( $CTV_{HR} \geq 30 \text{ cm}^3$ )



Combined IC/IS brachytherapy improves local control by enabling a tumour specific dose escalation resulting in significantly higher local control in large tumours without adding treatment related late morbidity. [1]

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**What is Elekta doing today to improve treatment, accessibility and adoption?**

# Gynecologic Cancer InterGroup Cervix Cancer Research Network



Engagement with the key stakeholders in the treatment of Cervical Cancer

Clinical Trial support

Education

Product/Procedure support and customer training

Innovation

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## Support of EMBRACE 1 and EMBRACE 2 studies



### Editorial

### Image Guided Adaptive Brachytherapy in cervix cancer: A new paradigm changing clinical practice and outcome



Kari Tanderup<sup>a</sup>, Jacob Christian Lindegaard<sup>a</sup>, Christian Kirisits<sup>b</sup>, Christine Haie-Meder<sup>c</sup>, Kathrin Kirchheiner<sup>b</sup>, Astrid de Leeuw<sup>d</sup>, Ina Jürgenliemk-Schulz<sup>d</sup>, Erik Van Limbergen<sup>e</sup>, Richard Pötter<sup>b,\*</sup>

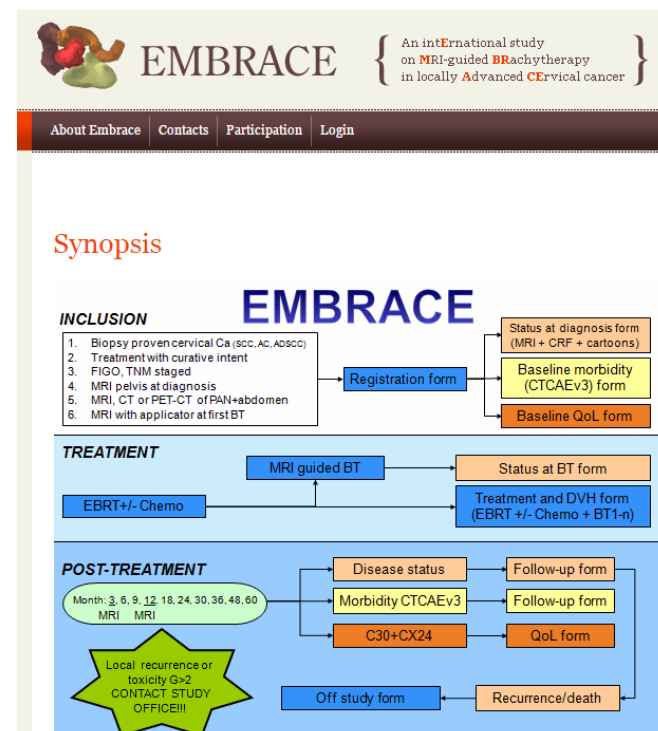
<sup>a</sup> Aarhus University Hospital, Department of Oncology, Denmark; <sup>b</sup> Medical University of Vienna, Comprehensive Cancer Center, Department of Radiation Oncology, Austria; <sup>c</sup> Gustave Roussy Cancer Campus Grand Paris, Department of Radiation Oncology, Villejuif, France; <sup>d</sup> University Medical Center Utrecht, Department of Radiotherapy, The Netherlands; and <sup>e</sup> Department of Radiation Oncology, University Hospital Gasthuisberg, Leuven, Belgium

Image Guided Adaptive Brachytherapy (IGABT) in locally advanced cervical cancer (LACC) is increasingly recognized as the new paradigm replacing 2D brachytherapy and spreading throughout the world. This spread is at present predominantly in Europe [1], North America [2] and in major centres in Asia. The Gyn GEC ESTRO Recommendations I–IV [3–6] on MRI based IGABT have been used as the conceptual frame for these developments during the last decade and are now embedded into the recently published

### Clinical outcome

There is growing clinical evidence that IGABT combined with radiochemotherapy leads overall to improved clinical outcome compared to 2D brachytherapy. This evidence is based on retrospective mono-institutional cohorts [15–18,44–48], on the prospective multicentre French comparative STIC trial [49] and now also on results from the RetroEMBRACE [19,20,24] and

First Results published in special issue Green Journal:  
Radiotherapy and Oncology 120 (2016)



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## Support of GCIg and CCRN

- Gynecologic Cancer InterGroup (GCIg)
  - Global studies in endometrial and cervical cancer
- More focused collaboration with Cervix Cancer Research Network (CCRN)
  - Leading up to meeting today

# Gynecologic Cancer InterGroup Cervix Cancer Research Network



## Journal of Contemporary Brachytherapy: Educational Activity



Educational Activity



Supported by Elekta

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# Gynecologic Cancer InterGroup Cervix Cancer Research Network



## BrachyAcademy: Tailored peer-to-peer education platform

A screenshot of the BrachyAcademy website. The top navigation bar includes links for "La braquiterapia para pacientes", "¿Quiénes somos?", "Contactar", and "Enlaces". A search bar with the placeholder "Búsqueda ..." and a magnifying glass icon is present. Below the search bar is a language dropdown menu set to "Español". The main navigation bar features links for "Programas educativos", "Centros educativos", "Biblioteca", "BrachyTalk", "Acerca de la braquiterapia", and "Mi BrachyAcademy". The main content area has a blue background with a photo of medical professionals on the left. Text on the right reads: "La plataforma educativa y de intercambio de información médica entre profesionales de la braquiterapia". The "BrachyAcademy" logo is at the bottom. A user login box on the right shows "Mi Academy", "Bienvenido/a Jan De Becker", and a "FINALIZAR SESIÓN" button.

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## BrachyTalk and Educational Procedure videos

### BrachyTalk- todas las entrevistas

#### Manténgase al día con BrachyTalk

El profesor Pedro Lara, del Hospital Universitario de Gran Canaria Dr. Negrín nos habla en español. En el resto de las entrevistas se habla inglés.

Descargo de responsabilidad: La información de estas entrevistas procede de profesionales médicos e incluye su opinión acerca de diversos temas. Esta opinión no refleja necesariamente la visión de la empresa. La información no ha sido revisada por otros compañeros y no debería utilizarse para extraer conclusiones médicas científicas ni para basar en ella las decisiones de sus tratamientos.

### General



Christian Kirisits, Medical University of Vienna/Menna General  
Hospital: 'Views on Brachytherapy'







Pedro Lara, Hospital Universitario de Gran Canaria Dr. Negrín:  
'Reflexiones sobre la Braquiterapia' (in Spanish language)

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## Gynecology Workshops

Fecha de inicio	Nombre del evento	Ubicación
2017-03-05	Comprehensive and Practical Brachytherapy <i>ESTRO Docente Curso</i>	Hungary
2017-03-08	Transition from Conventional 2D to 3D Radiotherapy with a special emphasis on Brachyth...	India
2017-03-08	1st ESTRO-AROI – GYN Teaching Course <i>ESTRO Docente Curso</i>	India
 2017-03-14	Real-time image guided HDR BT for prostate cancer <i>Educational Program</i>	Reino Unido
 2017-03-20	Image-guided adaptive brachy for gynecology 21th edition <i>Educational Program</i>	Austria
 2017-03-20	CT-Based HDR Brachytherapy for Prostate <i>Educational Program</i>	Estados Unidos
 2017-03-30	Essentials in Skin Surface Brachytherapy <i>Educational Program</i>	Estados Unidos

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Cervix brachytherapy workshops also held in Austria, United States, India, Hong Kong and China







## Cervix Brachy Education Centers/Reference sites

### Educational Centers

Educational Centers provide educational services for healthcare professionals who want to gain brachytherapy skills or brush up on their existing skills. The hospitals designated as Educational Centers are fully equipped with the latest brachytherapy solutions and offer quality education programs to international audiences. The brachytherapy experts working in the Educational Centers will share and explain the complete workflow of brachytherapy treatment from imaging through to patient preparation, treatment planning and treatment delivery. The educational service can be provided in various program formats, such as Clinical Workshops or Training Visits.

The BrachyAcademy hosts an extensive range of designated Educational Centers all over the world, and the list only continues to grow. To find your nearest educational center, see the list below.

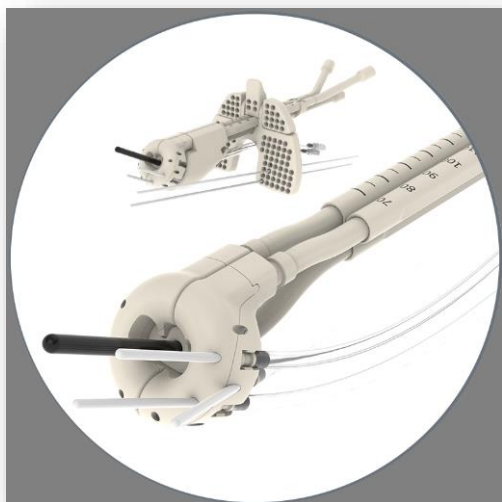


National University Hospital, Singapore  
Chiang Mai University Hospital, Thailand  
King Chulalongkorn Memorial Hospital, Thailand  
TATA Memorial Hospital, India  
Gunma University Hospital, Japan  
Dr. Negrin University Hospital, Spain  
Hospital Charles-Le Moyne, Canada  
Leiden University Medical Centre, Netherlands  
Medical University of Vienna, Austria  
National Centre for Cancer Care and Research, Qatar

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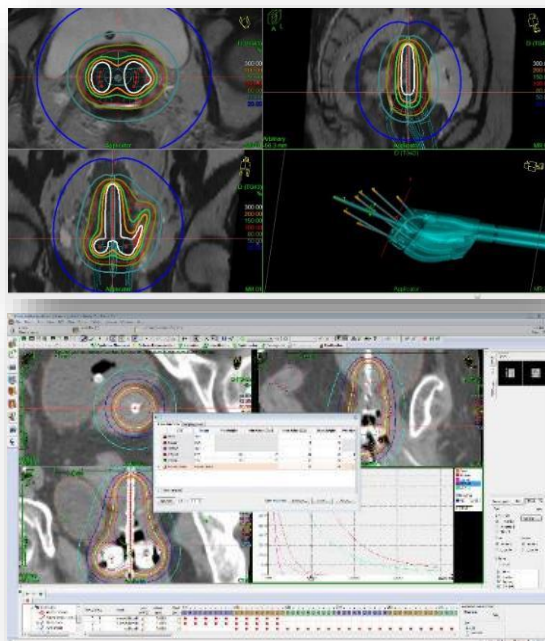


## Elekta solutions for image-guided adaptive brachytherapy



Largest CT/MR compatible  
applicator portfolio

Now also a new option for  
advanced staged cervical  
cancer: Venezia\*™



Intelligent tools to simplify treatment  
planning – eg. speed up reconstruction  
and optimize dosimetry



State of the art treatment delivery:  
Intuitive, safe, accurate

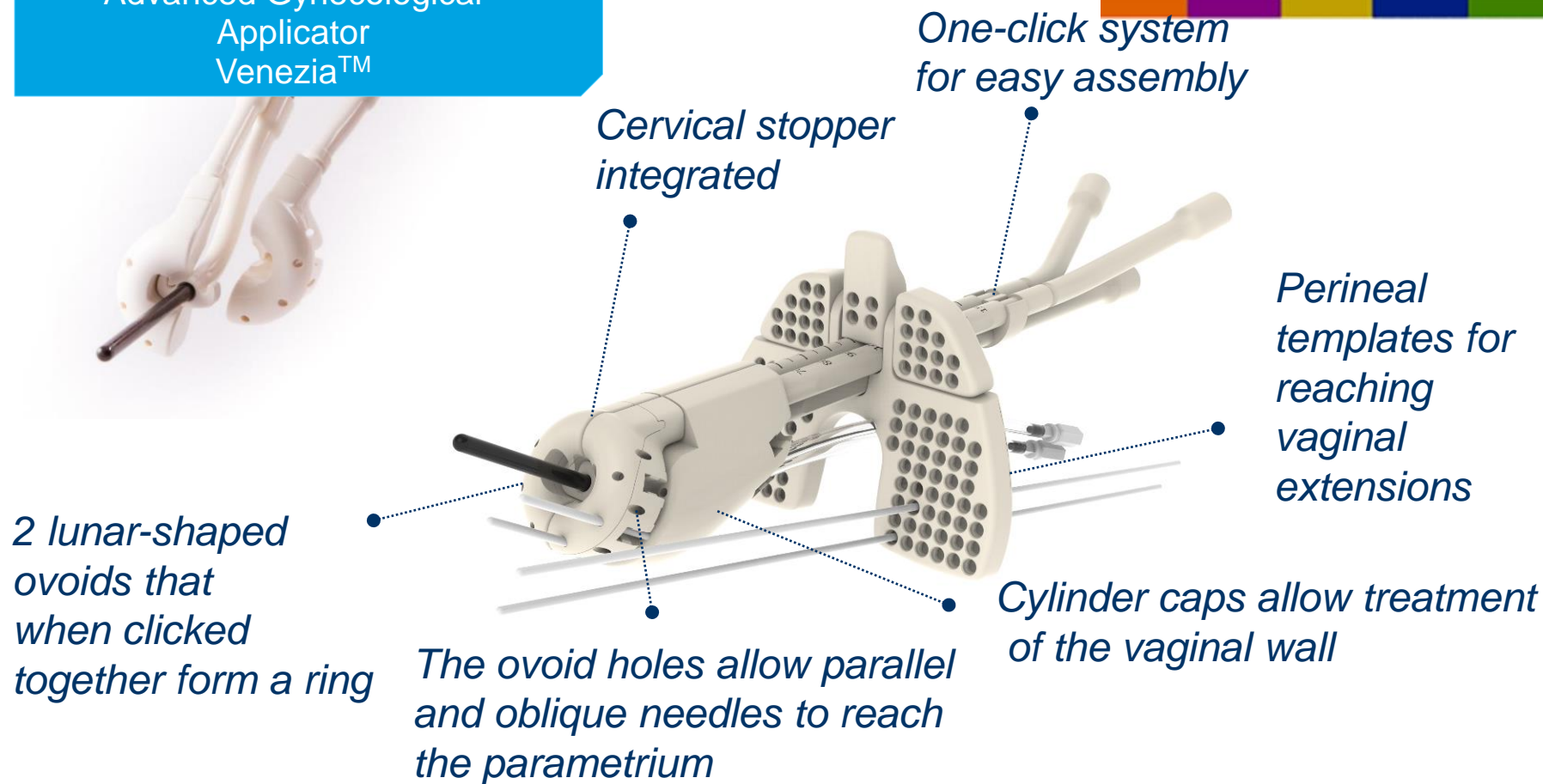
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# Gynecologic Cancer InterGroup Cervix Cancer Research Network



Advanced Gynecological  
Applicator  
Venezia™



# Gynecologic Cancer InterGroup Cervix Cancer Research Network



## Benefit from full support, education and training

### Elekta Brachytherapy



- **Innovator & market leader** in BT since 1975
- Used in over **2000 hospitals** worldwide

### Implementation Support



- **On-site implementation team** to support clinical start and initial procedures
- Network of experienced BT specialists and **service professionals available 24/7**

### Training & Services



- **Peer-to-peer education** through [BrachyAcademy.com](http://BrachyAcademy.com)
- **Training onsite**
- **In-depth training** for the whole team at Elekta Learning and Innovation Center (LINC) in Atlanta, **Beijing**



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Thank you for your attention



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