



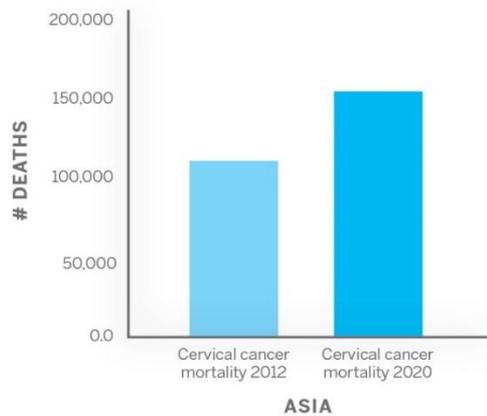
Gynecologic Cancer InterGroup Cervix Cancer Research Network

Elekta: Emerging markets

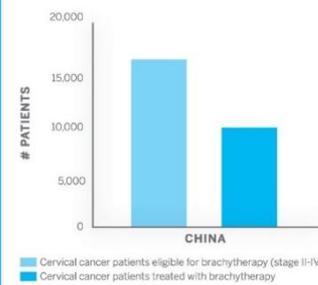
Cervix Cancer Education Symposium, January 2016, Bangkok, Thailand

144,000 deaths were related to cervical cancer in Asia in 2012
This number is expected to grow to 176,000 by 2020.^I

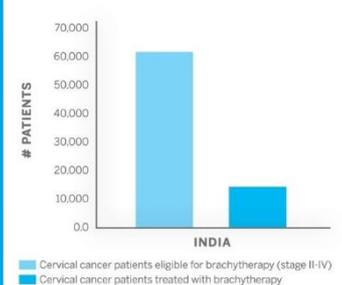
Mortality related to cervical cancer



Estimate of cervical cancer patients in China



Estimate of cervical cancer patients in India



Of all cervical cancer patients in China who are eligible for brachytherapy 35% go untreated.^{II}

Of all cervical cancer patients in India who are eligible for brachytherapy 73% go untreated.^{II}

[I] Globocan 2012, United Nations population data 2015.

[II] Globocan 2012, United nations population data 2015, Internal Elekta data, IMV 2014.

A brachytherapy boost is associated with a **12% increase in survival** at four years in locally advanced cervical cancer patients

SEER database study: 7,359 patients with Stage 1B2 to IVA⁸

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EDITORIAL

Curative Radiation Therapy for Locally Advanced Cervical Cancer: **Brachytherapy Is NOT Optional**

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Richard Pötter, MD,^{||} and Perry W. Grigsby, MD^{*}

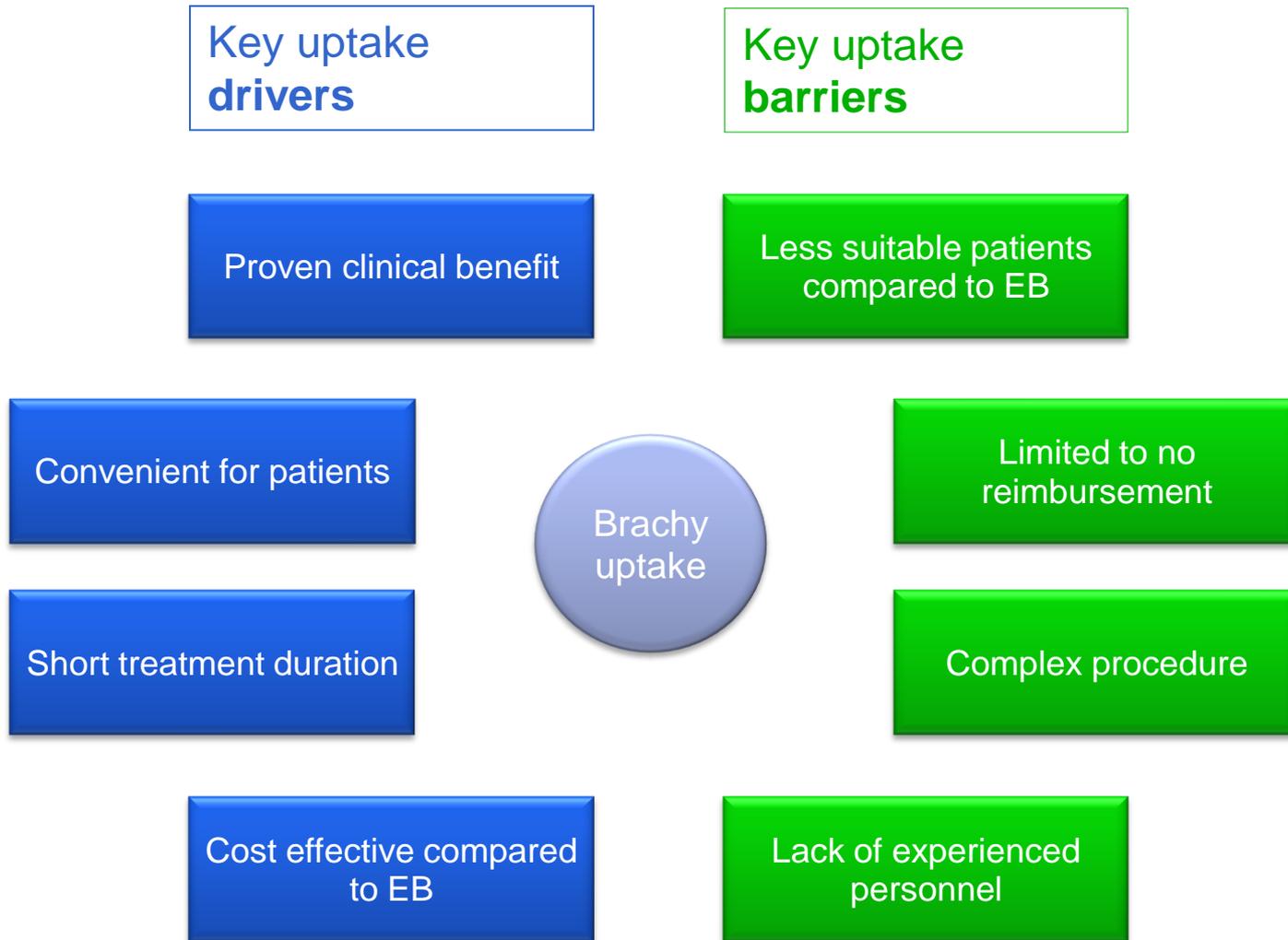
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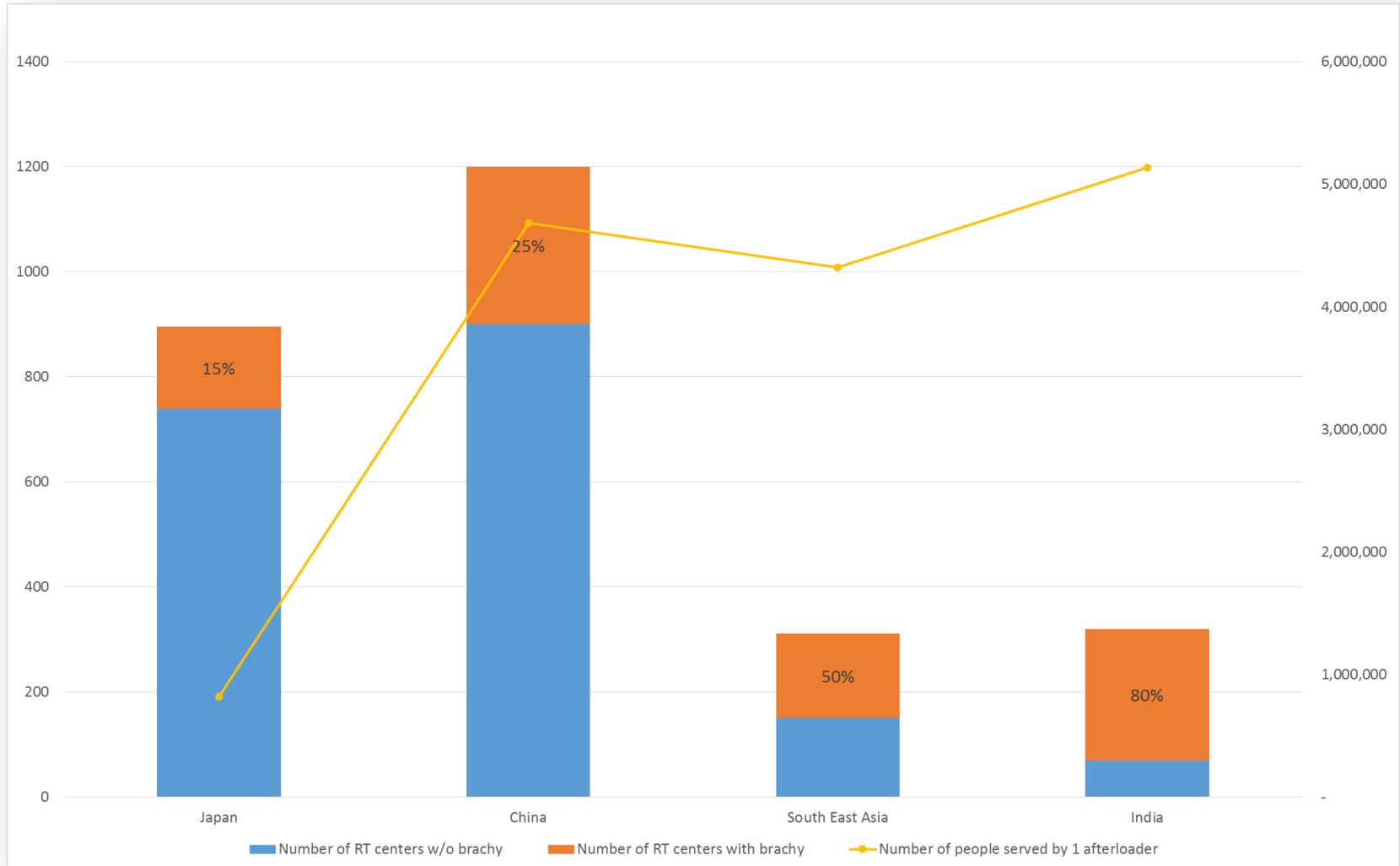
Key component of treatment in a substantial number of patients with cervical cancer

- Guidelines confirm that brachytherapy is standard of care in locally advanced cervical cancer, typically combined with EBRT and chemotherapy (stage 1B2 – IVA)¹⁻⁶
- In patients with locally advanced cervical cancer brachytherapy use is associated with lower local recurrence rates and higher survival rates^{7,8}
- Maximum sparing of organs at risk alongside a very high radiation dose to the center of the tumor can only be achieved with brachytherapy, not with IMRT⁷
- A substantial number of patients, more than 45% in the western world* and 80% in developing lands** present with later stage disease (II-IV)⁹

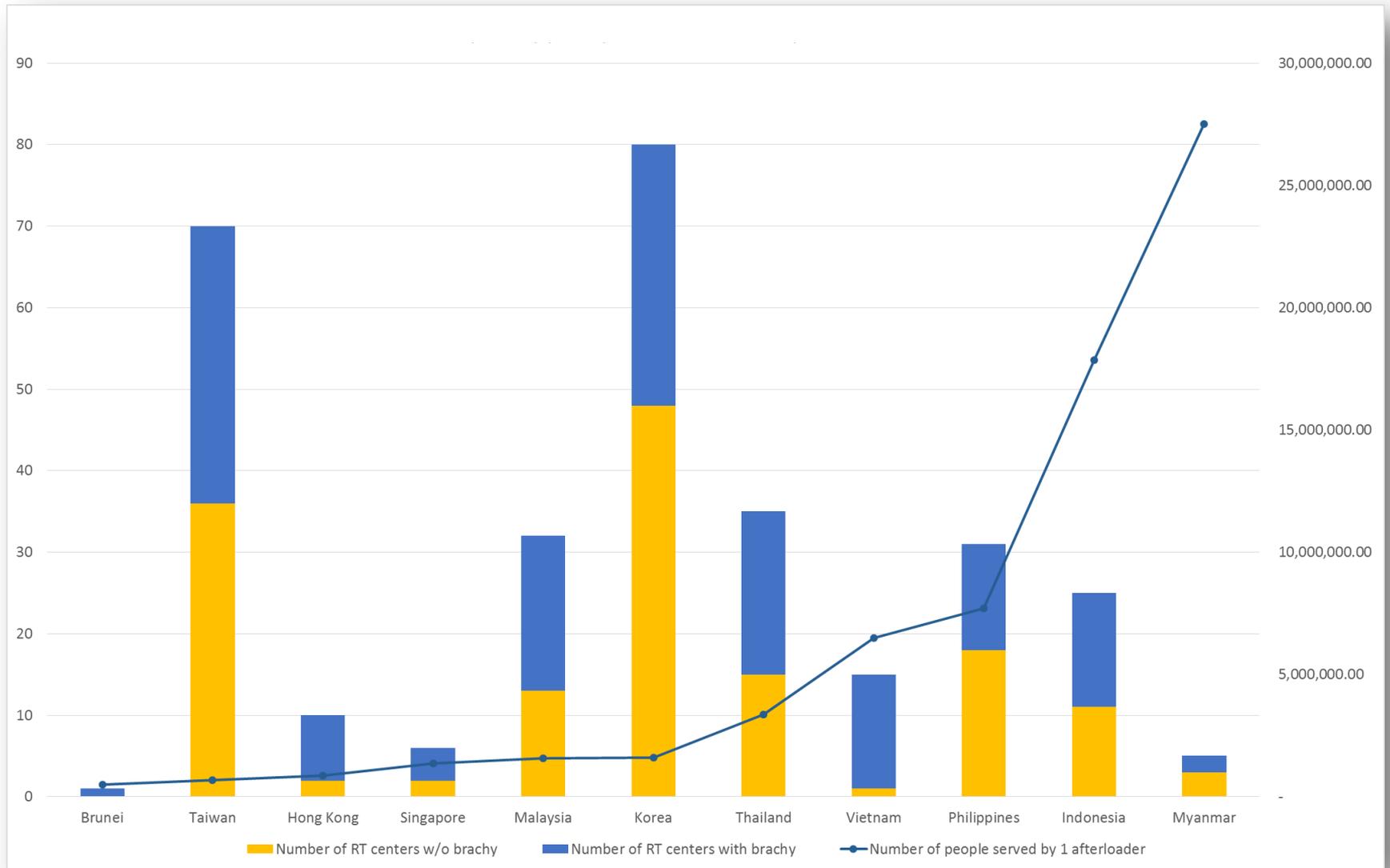




Brachytherapy Accessibility and Adoption in Asia



Brachytherapy Accessibility and Adoption in South East Asia



An example

- A hospital in Thailand is treating 1,000 brachytherapy patients per year with 1 afterloader
- We cannot ask this hospital to choose between providing “better than nothing care” for everyone and “improving quality of care” and thus no longer treating everyone
- How do we improve accessibility to brachytherapy so that we no longer have this dilemma and ensure that all patients have access to good quality care?

High-tech image-guided therapy versus low-tech, simple, cheap gynecologic brachytherapy

“The overall international road map must be to build a comprehensive system of image-guided gynecologic brachytherapy integrating all the various technological possibilities and making them available for the various clinical scenarios – comparable with EBRT – which can lead to worldwide dissemination and implementation. This is more than “simple and cheap” but will serve the needs of women in one world living in regions with varying resources”

Why is brachy under-utilized in Asia?

- There is limited to no reimbursement, in many countries brachy programs operate at a loss
 - Usually no budget to invest or to keep systems up to date
 - Brachy equipment shutdown
- Complex procedure (compared to external beam) & infrastructure challenges
- Increasing regulatory burden from medical device & radiation authorities
- Lack of experienced personnel
 - Limited number of RadOncs are trained to perform brachy
 - Brachytherapy is often not included in university or residents curriculum
 - The younger generation is more attracted to new (external beam) technologies
- Limited awareness of the clinical evidence
- Limited clinical trial focus/infrastructure

We estimate that around 20% of the installed afterloaders in India are not being used due to low reimbursement in combination with high import tax & regulatory challenges*

*The Indian Brachy Society is leading an effort for improvement to get tax reduction and easier AERB approval process

Government reimbursement for brachy

	Intracavitary US\$ per fraction	Interstitial US\$ per fraction	Differentiation 2D – 3D
Japan	850	1950	No
Singapore	?	?	?
Hong Kong	?	?	?
China	?	?	Yes
India	115	115	No
Taiwan	100	350	No
Malaysia	-	-	-
Korea	150 Only for > 4 fractions	150 Only for > 4 fractions	No
Thailand	160	160	No
Vietnam	200	200	No
Philippines	-	-	-
Indonesia	-	-	-
Myanmar	-	-	-

Questions to answer

- How do we attract the next generation of Radiation Oncologists?
- (How) Can we influence MoH to implement and improve reimbursement?
- Is there a need for developing a protocol adapted to emerging markets – considering patient volume and infrastructure differences?
-?
- What do you expect from the industry?

What is Elekta doing today to improve accessibility and adoption?

Engagement with the key stakeholders in the treatment of Cervical Cancer in Asia

Clinical Trial support

Education

Product/Procedure support and customer training

Innovation

Support of EMBRACE 1 and EMBRACE 2 studies

- Multicenter trial including centers in Asia led by Prof Richard Pötter in Vienna

First results published

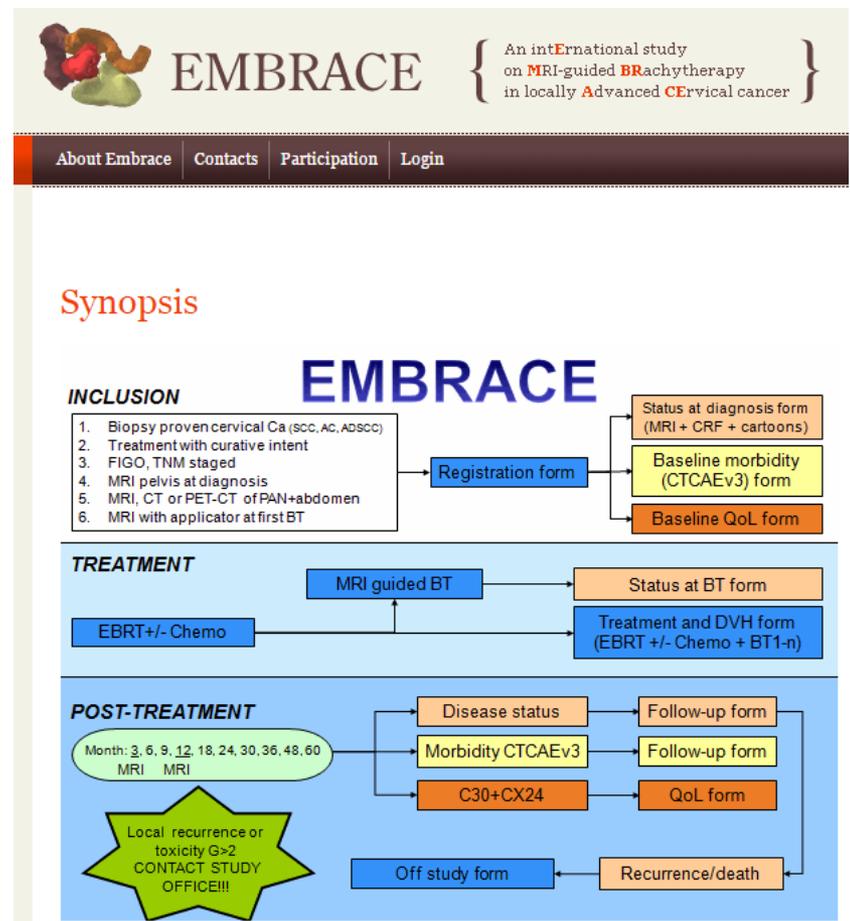
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Clinical Investigation: Gynecologic Tumor

Manifestation Pattern of Early-Late Vaginal Morbidity After Definitive Radiation (Chemo)Therapy and Image-Guided Adaptive Brachytherapy for Locally Advanced Cervical Cancer: An Analysis From the EMBRACE Study

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Support of GCIIG and CCRN

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



Educational Activity



Supported by Elekta



“In a country with a huge cancer burden and a lack of conformal teletherapy machines, brachytherapy can be very useful and effective in order to deliver the curative dose.

Brachytherapy is not practiced to its full potential”

BrachyAcademy: Tailored peer-to-peer education platform

The screenshot displays the BrachyAcademy website. At the top left is the logo for BrachyAcademy, featuring a globe and the text "Supported by Elekta". To the right of the logo are navigation links: "Brachytherapy for Patients", "About us", "Contact", and "Links". Below these links is a search bar with the placeholder text "Search ..." and a magnifying glass icon. A language dropdown menu is set to "English" with a UK flag icon. A horizontal menu below the search bar contains the following items: "Educational Programs", "Educational Centers", "e-Library", "About Brachytherapy", and "My Academy". The main content area features a large blue banner with a photograph of medical professionals on the left. The text on the banner reads: "The peer-to-peer education platform for brachy professionals" and "BrachyAcademy" in a large font, with a "more >" link below it. A "My Academy" login overlay is positioned on the right side of the banner, containing a "Lost Password >>" link, input fields for "USERNAME" (containing "nlsprsus") and "PASSWORD" (containing "*****"), a "LOG IN" button, and a "Register" link.

www.brachyacademy.com

BrachyTalk and Educational Procedure videos

Keep up to date with BrachyTalk



September 3, 2015

BrachyAcademy proudly presents BrachyTalk as a new feature to keep up to date with the latest news and views from the brachytherapy experts. The first video interviews include insights on ...

[read more](#)

New educational video
“combined interstitial &
intracavitary BT for cervical
cancer”



May 28, 2015

Brachyacademy is proud to present a new educational video: “Combined interstitial & intracavitary brachytherapy for cervical cancer” The video shows a clinical procedure of the t...

[read more](#)

Gynecology workshops

Start date	Event name	Location
 2016-01-21	HDR and electronic brachytherapy for skin cancer 2nd edition <i>Educational Program</i>	United Kingdom
 2016-02-25	Essentials in Gynecological HDR Brachytherapy <i>Educational Program</i>	United States
 2016-03-07	Image-guided adaptive brachy for gynecology 19th edition <i>Educational Program</i>	Austria
2016-03-09	10TH EUROPEAN BREAST CANCER CONFERENCE <i>Congress</i>	The Netherlands
2016-03-13	Modern Brachytherapy techniques <i>ESTRO Teaching Course</i>	Italy
 2016-03-17	Transition from 2D to 3D Brachytherapy for Gynecology <i>Educational Program</i>	Thailand

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

Elekta LINC (Learning and Innovation Center) in Beijing China open since 2013

Issues in Asian facilities (1)

The content of clinical workshop includes 2 important issues in Asian facilities:

1. CT-based treatment planning

MRI-based planning is known as golden standard, however, MRI for planning is difficult in most of Asian facilities. Instead, CT-based treatment planning is rapidly used in the clinical setting.

We should understand the strength and weakness of the CT-based planning. In addition, we will discuss the solutions.





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

Sharing Experience



The adoption of 3D image-guided brachytherapy for cervical carcinoma is gaining momentum in Southeast Asia and heading north



WHITE PAPER

Chiang Mai University Hospital, Thailand Ekkasit Tharavichitkul, MD

3D image-guided brachytherapy (3D IGBT) in patients with cervical carcinoma is associated with very good clinical outcomes. This has been recognized for many years throughout the world, and is being applied actively in Europe and the United States.

During 3D IGBT, MRI images are used to contour the tumor and surrounding organs-at-risk (OAR), enabling highly accurate planning of sufficient radiation doses to better treat the tumor. At the same time, doses to OARs, such as the bladder and rectum, are reduced (figures 2-4). Despite these benefits to the patient, the adoption of 3D IGBT for cervical carcinoma is slow in Southeast Asia, but is gaining momentum.

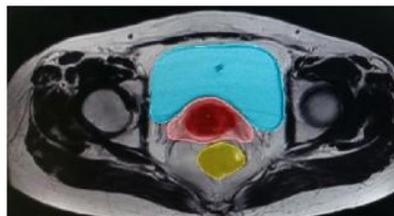


Figure 1: Chiang Mai IGBT team – Division of therapeutic radiology and oncology – faculty of medicine

Elekta Brachytherapy Solutions and Innovations

- Flexitron Ir192 & Co60
- Improvements in TPS like Applicator Modeling
- Continuous innovations in our applicator portfolio like Fletcher CT/MR Shielded
- Ultrasound guided cervix treatment

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
- **Training onsite**
- **In-depth training** for the whole team at Elekta Learning and Innovation Center (LINC) in Atlanta, **Beijing**



Our brachytherapy solutions will always be considered for treating and beating cancer

