مركز الحسين للسرطان
KING HUSSEIN CANCER CENTER

Innovative,Robust and affordable Medical Linear Accelerators for Chellenging Environments Workshop

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Jordan

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- Middle East country

- Population : 9.5 millions
 (6.5 millions Jordanians & 3 millions from Arab countries (mainly refugees from Syria, Iraq ,Yemen, Palestine)

- **Jordan's economy remains sluggish due to geopolitical instability & war crises in many neighboring countries**

- Recently the World Bank reduced classifications of Jordan from
 high middle to low middle

Cancer in Jordan
(National Cancer Registry Report 2014)

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- Total number 8940 cases
  5640 Jordanians
  3300 Non Jordanians
- 5 most common cancers in Jordan

Males	**Females**
Colorectal	Breast
Lung	Colorectal
Bladder	Thyroid
Prostate	Uterine
Lymphoma	Lymphoma

RT facilities in Jordan

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- **4 facilities (all in Amman)**

1- King Hussein Cancer Center (The only Comprehensive Cancer Center)

6 Linacs (Elekta MV 4,6,6FFF,10,10FFF and 15,Electrons 4-18 MeVs) , 2 CT sim, 1 HDR Microselectron Brachy, Mould room

TPS: Pinnacle, Monaco & Oncentra (Brachy)

Techniques: 3DCRT, IMRT, TBI, TSI, SBRT (Lung,Liver), SRS, FSR, 3D Brachy, IGRT (CBCT), PET/CT connected

Staff : # 13 Cons. Rad Onc, 12 residents, 12 Physicists/dosimetrists, 25 technologists

10 coordinator nurses

75 % of cancer pts in Jordan

2- Royal Military Hospital

2 Linac (Elekta), 1 CT sim, 1 HDR Microselectron Brachy , Mould room

TPS: XIO

Techniques: 3 DCRT, Brachy (2D)

Staff 6 Cons. Rad Onc, 10 residents, 9 physicists/dosimetrists , 15 technologists, 6 general nurses

RT facilities in Jordan

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3- Al Basheer Hospital (Gov. hospital)

2 Linac (Siemens), 1 CT sim

Techniques 3DCRT

TPS: E clips

Staff : 8 Cons. Rad Onc, 8 residents, 5 physicists/dosimetrists, 10 technoligists, NO dedicated nurses

4- Alafia private RT facility

2 Linac (Elekta) , 1 CT sim

TPS: Monaco

Techniques : 3 DCRT

Staff : 7 private Cons. Rad Onc, 3 physicists, 6 technologists, NO dedicated nurses

Training available in Jordan

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- 4 years Board in Radiation Oncology specialty (Accredited & supervised by Jordan Medical Council)

- No dedicated programs for RT physics, or technology

  4 yrs General Physics degree

  4 yrs Radiology Technology degree

- Site specific Workshops (UICC, ESO, IAEA, Twinning programs)
- Agreements ,Twinning programs (PMH, Sick hospital, Moffitt, Leeds MDACC, St Jude)

Obstacles

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- Increasing number of cancer patients
- Overload, delay in treatments (4-6 weeks)
- Increases of working hours
- Chances of increase incidents (human errors)
- Machines breakdown (parts- 1-3 weeks)
- Marked Variation in care delivery between facilities
- Training of staff on new techniques
- Lack of multidisciplinary team work (except at KHCC)
- Lack of treatment guidelines (except at KHCC)

Needs

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- Advanced training for staff (rad onc, hysicists/dosimetrists,technologists)
- CT sim /MRI
- Cyberknife

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Thank you