# 16th ICRO PG Teaching Program

26th & 27th April 2014

RCC, IGMC – SHIMLA

**QUIZ**

# Q No 1

**Which of the following mega-voltage beams will have the sharper physical penumbra**

a. Co 60 beam
b. 18 mV beam
c. 10 mV beam
d. 4 mV beam

**Ans: D**

# Q No 2

**Which of the following is true**

a. TPR is special case of TMR
b. TAR is special case of TPR
c. TMR is special case of TPR
d. TMR and TAR are special cases of TPR

**Ans: D**

# Q No 3

**PDD is affected by**

a. Source size
b. SSD
c. SAD of the treatment unit
d. Depth of dmax

**Ans: B**

# Q No 4

**A patient id being treated SSD technique by three beam (Ant, ROO, LPO) The depth of the tumor for these beam is 8cm, 10cm & 12 cm respectively. The beam are weighted equally at their respective dmax Beam weights at tumor are:**

a. Ant: RPO:LPO = Equal for all beams
b. Ant: RPO:LPO = Low : Medium : High
c. Ant: RPO:LPO = High : Medium : Low
d. Ant: RPO:LPO = Medium : High : Low

**Ans: C**

# Q No 5

**With Linacs, we use MUs to monitor dose delivered for the following reason**

a. Instantaneous dose rate from Linac can flactuate
b. Because Linac uses either magnetron or Klystron
c. Linac has target whereas cobalt is a radioactive source.
d. Source size in Linac is very small

**Ans: A**

# Q No 6

**In Ca BOT $T_3$ $N_0$ $M_0$ which statement is correct**

a. Level II nodes to be contoured up to base of skull
b. Level II nodes to be contoured up to cranial edge of the body of the cervical one vertebrae
c. Level II nodes to be contoured up to caudal edge of the transverse process of c-1 vertebrae
d. Level II to be contoured up to cranial edge of the transverse process of C-1 vertebrae

**Ans: C**

# Q No 7

**In a case of Ca tongue (Ant) following nodes to be irradiated in N0 node**

a. Level I, II & III
b. Level I, II, III, & IV
c. Level I, II, III, IV & V
d. Level I, II, III & RP

**Ans: B**

# Q No 8

**Which of the following statement is not correct**

a. In Ca post pharyngeal wall Ca R. P nodes to be treated
b. In Ca larynx with position neck RP nodes to be treated
c. In Ca tonsil with N0 neck RP nodes not to be treated
d. In Ca nasopharynx RP nodes should always be treated

**Ans: B**

# Q No 9

**In non nasopharyngeal H & N Ca which node can be omitted from including in CTV in node positive neck**

a. Medial RP node
b. Internal RP node
c. Level V nodes
d. Level I nodes

**Ans: A**

# Q No 10

**The deviding plane between level v node into va & vb is**

a. Omohoid muscle crosses the internal jugular vein
b. Lower border of cricoid cartilage
c. Same as dividing plane between level III & level IV
d. All the above are correct.

**Ans: D**

# Q No 11

**According to ICRU 50, the dose to target volume should be between**

a. +5% to -7%
b. +5% to -5%
c. +7% to -5%
d. +7% to -7%

**Ans: C**

# Q No 12

**Which of the follow is not an indication of post op-RT in Ca head & neck**

a. Vascular Invasion
b. Perineural Invasion
c. Resection Margin > 1cm
d. > 2 nodes are involved

**Ans: C**

# Q No 13

**Level III lymph nodes in neck are**

a. Buccofacial lymph nodes
b. Occipital lymph nodes
c. Parotid lymph nodes
d. Retropharyngeal lymph nodes

**Ans: C**

# Q No 14

**Which of the field margin in $T_1$ $N_0$ $M_0$ glottic ca is not correct**

a. Superior: Top of the thyroid cartilage
b. Inferior: Top of the cricoid cartilage
c. Posterior: In front of the vertebral bodies
d. Anterior: 0.5-1 cm fall off to skin (open field)

**Ans: B**

# Q No 15

**For the anterior & lateral wedge field planning for Ca maxillary antum which one is not correct**

a. The medial margin of anterior field should include white of opposite eye
b. The lateral field should be given $5^0$ posterior tilt to save lens of opposite eye.
c. Lower level of anterior field is angle of mouth
d. A mouth bite should never be used

**Ans: D**

# Q No 16

**Simple beam shaping of parallel opposed portals using blocks or MLCs either on simulator films or CT dataset with resultant dose distribution is**

a. 2D – RT
b. 2.5D – RT
c. 3D – CRT
d. IMRT

**Ans: B**

# Q No 17

**The projections of the target volumes and OARs from the origin of the beam is called**

a. DRR
b. BEV
c. Portal Image
d. Any of the above

**Ans: B**

# Q No 18

**Highest conformity of high-dose volume is achieved by**

a. 2D – RT
b. 2.5D – RT
c. 3D – CRT
d. IMRT

**Ans: D**

# Q No 19

**Conformed dose distribution in Head Neck 3D-CRT is achieved by**

a. Multiple fields
b. Beam modifiers (MICs/Wedges)
c. Beam weightage
d. All of the above

**Ans: D**

# Q No 20

**Low dose spillage in conformal radiotherapy is maximum with**

a. 2D – RT
b. 2.5D – RT
c. 3D – CRT
d. IMRT

**Ans: D**

# Q No 21

**Where do you use “wedges” to modulate the dose within the target volume**

a. IMRT
b. IGRT
c. SRS
d. 3-D CRT

**Ans: D**

# Q No 22

**DARS – Dysphagia, Aspiration related structures are all except**

a. Supraglotic larynx
b. Tongue
c. Superior constrictor muscles
d. Middle constrictor muscles

**Ans: B**

# Q No 23

**OAR while treating a case of Ca N. P. are all except**

a. Parotid
b. Cochlea
c. Larynx
d. Retropharyngeal L.N.

**Ans: D**

# Q No 24

**Simultaneous Integrated boost is possible with**

a. 2D tech.
b. 3D CRT
c. SRS
d. IMRT

**Ans: D**

# Q No 25

**IMRT technology helps in all of the below except**

a. Sharp dose gradient
b. Reducing dose to OAR
c. Increasing the survival
d. Complex targets with varied tissue homogeneity

**Ans: C**

# Q No 26

**IGRT by definition includes  which of the following as most important component**

a. Dosimetric constraints for OAR
b. Imaging to adjust for motion and potential uncertainty
c. Always includes PET based imaging plan
d. Biological tumour volume

**Ans: B**

# Q No 27

**Intra-fraction patient motion management helps in**

a. Decreasing random errors
b. Decreasing systematic errors
c. Better dosimetry
d. Plan Evaluation

**Ans: B**

# Q No 28

**Various studies have shown that the volume of the parotid gland is decreased by treatment with radiation with the rate of**

a. 0.5% per day
b. 0.7% per day
c. 10% per day
d. < 0.5% per day

**Ans: B**

# Q No 29

**The tolerance dose of parotid gland is**

a. Mean dose ≤ 35 Gy in at least one gland
b. Mean dose ≤ 15 Gy in at least one gland
c. Mean dose ≤ 26 Gy in at least one gland
d. Mean dose ≤ 40 Gy in at least one gland

**Ans: C**

# Q No 30

**The need for replanning were higher in**

a. Hypofractionated Radiation
b. Hyperfractionated Radiation
c. Conventional Radiation
d. Accelerated  Hyperfractionation

**Ans: C**

# Q No 31

**PTV can cover**

a. Organ Motion
b. Setup errors
c. Microscopic disease
d. All of the above

**Ans: D**

# Q No 32

**How is hotspot defined in 3D CRT**

a. More than 100% dose in 15mm diameter area
b. More than 100% dose 2cm sq area
c. More that 107% dose in PTV
d. Non of the above

**Ans: A**

# Q No 33

**In IMRT, the parameter most representative of prescription dose is**

a. ICRU reference point
b. Near maximum dose ($D_2$%)
c. Median dose ($D_{50}$%)
d. Average dose in PTV

**Ans: C**

# Q No 34

**Parotid dose should be confined to**

a. Mean dose < 26 Gy in one gland
b. At least 20cc of combined volume should be limited to 20 Gy
c. At least 50% of gland receives < 30Gy
d. All of the above

**Ans: D**

# Q No 35

**Dose to uninvolved normal structure in best described by the**

a. RVR
b. Homogeneity index
c. SIB
d. Irradiated volume

**Ans: A**

# Q No 36

**What is the stage grouping for a patient with $T_3$ $N_2$ $M_0$ lung cancer**

a. Stage IIa
b. Stage IIIa
c. Stage IIIb
d. Stage IV

**Ans: C**

# Q No 37

**Where do you give prophylactic cranial radiation**

a. Bronchoalveolar Carcinoma
b. Adenocarcinoma
c. Small cell carcinoma
d. Non-small cell lung cancer

**Ans: C**

# Q No 38

**What is the curative dose for early stage lung cancer**

a. 45 Gy @ 180 cGy
b. 64 Gy @ 200 cGy
c. 69 Gy @ twice /day – hyperfractionated
d. 69 Gy @ twice /day – hypofractionated

**Ans: D**

# Q No 39

**Concurrent chemo radiation is recommended for down staging the following cancers before surgery**

a. Stage I NSCLC
b. Stage IIIa NSCLC
c. Carcinoma Cervix
d. Carcinoma pancreas

**Ans: B**

# Q No 40

**Radiation is started with cycle 2 of chemotherapy with**

a. Bronchoalveolar Carcinoma
b. Stage IV NSCLC
c. Limited disease small cell lung cancer
d. Pancoast  tumor

**Ans: C**

# Q No 41

**Which nodal group is not adequately covered by a 7 mm margin around the vessels**

a. Common iliac
b. Internal iliac
c. Obturator
d. presacral

**Ans: D**

Q No 42

**Majority of the inguinal lymph nodes are situated where, in relation to the femoral vessels**

a. Anteromedial
b. Medial
c. Lateral
d. posterior

**Ans: A**

# Q No 43

**Stop contouring for the external iliac nodes at the**

a. Bottom of the femoral head
b. Top of femoral heads
c. Top of symphysis pubis
d. Beginning of obturator frames

**Ans: B**

# Q No 44

**For anorectal cancers CTV - A includes**

a. External iliac nodal region
b. Inguinal nodal region
c. Internal iliac, pre-sacral & perirectal nodes
d. Only peri-rectal nodes

**Ans: C**

# Q No 45

**The main drainage to the prostate is to the**

a. External iliac lymph nodes
b. Common iliac lymph nodes
c. Internal iliac & presacral nodes
d. Inguinal lymph nodes

**Ans: C**

# Q No 46

**In 2D planning of Ca Cervix lower border is**

a. At lower border of obturator foramina
b. 3 cm below lower extent of growth
c. 2 cm below lower extent of growth
d. Both a & b are correct

**Ans: D**

# Q No 47

**Which of the following is not a target in Ca cervix**

a. Uterosacral ligament
b. Parametrium
c. Uterus
d. Inguinal nodes

**Ans: D**

# Q No 48

**Which of the following statement is not correct**

a. Lower border of ant portal for prostate cancer is at lower border of ischial tuburosity
b. The intraluminal spread in Ca rectum is not more than 2 cm distally
c. Anterior border in lateral portal for ca urinary bladder is 1cm ant to ant border of pubic symphasis
d. The ant border of lateral portal for ca rectum is at ant pubic symphysis

**Ans: D**

# Q No 49

**In Ca prostate the lower border of anterior portal is kept at**

a. 2cm below urogenital diaphragm
b. At the lower border of ischial tuberosity
c. 1 cm below urogenital diaphragm
d. Both option **b** & **c** correct

**Ans: D**

# Q No 50

**Pre sacral nodes are not marked in**

a. Ca Endometrium
b. Ca Cervix
c. Ca Prostate
d. Ca Rectum

**Ans: A**

# Q No 51

**With 3D planning for cervical cancer we achieve**

a. Dose escalation
b. OAR Sparing
c. Improved tumor control
d. All of the above

**Ans: B**

# Q No 52

**Box field 3D-CRT technique for cervical cancer following statement is incorrect**

a. Better than AP/PA portal arrangement
b. Beam selection is important
c. Both of the above
d. None of the above

**Ans: D**

# Q No 53

**IMRT in cervical cancer can**

a. Reduce acute and late GI toxicities
b. Escalate dose to gross nodes
c. Recommended for post operative situations
d. All of the above

**Ans: D**

# Q No 54

**Adaptive IGRT in cervical cancer takes into account**

a. Organ Motion
b. Tumour regression
c. Setup inaccuracies
d. All of the above

**Ans: D**

# Q No 55

**In prostate cancer following newer RT technique is recommended for localised prostate cancer**

a. 3D CRT
b. IMRT
c. Both
d. Non of the above

**Ans: B**

# Q No 56

**Post-operative radiation in Ca breast reduce local recurrence by:**

a. 1/2
b. 3/4
c. 2/3
d. 1/3

**Ans: C**

# Q No 57

**Post-operative radiation in Ca breast increase 5 years survival by**

a. 10%
b. 5%
c. 2%
d. 20%

**Ans: B**

# Q No 58

**When patient is positioned on the breast board, the arm is abducted by**

a. 60°
b. 80°
c. 45°
d. 90°

**Ans: D**

# Q No 59

**Indication for addition of posterior axillary field in Ca breast is  when**

a. Axilla is not dissected
b. Separation of axilla is more than 12 cms
c. There is extracapsular involvement
d. Axilla is heavily involved

**Ans: A**

# Q No 60

**Central lung distance (CLD) should not exceed on simulation of Ca breast**

a. 3 cm
b. 2.5 cm
c. 1.5 cm
d. 3.5 cm

**Ans: A**

# Q No 61

**What are the advantages of 3-D treatment in breast cancer?**

a. Better dose homogeneity
b. Better dose conformality
c. SIB – Feasible
d. All of the above

**Ans: D**

# Q No 62

**In F-IMRT following is not true.**

a. Beam parameters are specified
b. Manual Iteration
c. Planning is quicker
d. Subjective Function

**Ans: C**

# Q No 63

**In IMRT plan evaluation following points are taken in to consideration except**

a. Target Coverage
b. Homogeneity of dose distribution
c. OAR dose to Parotid
d. Dose distribution in all slices

**Ans: D**

# Q No 64

**The advantage of F-IMRT is proved by study from**

a. Princes Margaret Hospital
b. START – A Trial
c. START – B Trial
d. William Beaumont Hospital

**Ans: C**

# Q No 65

**Advantage of conformal therapy in breast is**

a. Shorter OTT
b. Dose to the Larynx can be reduced
c. Dose to lung and heart minimised
d. Better dose delivery

**Ans: C**

# Q No 66

**In 3D-CRT which structure you can omit in GTV**

a. Normal Oesophagus just adjacent to tumor
b. Uninvolved nodes
c. Para oesophageal tissue
d. None of the above

**Ans: B**

# Q No 67

**Position of patient during 3-field planning**

a. Supine with arms by side
b. Supine with arms raised above
c. Supine with arms resting on hips
d. None of the above

**Ans: B**

# Q No 68

**Treatment in prone position will spare**

a. Liver
b. Heart
c. Spinal Cord
d. None of the above

**Ans: C**

# Q No 69

**For 2D plan minimum margin of normal oesophagus above & below the visible tumor**

a. 5cm
b. 3cm
c. 8cm
d. 1cm

**Ans: A**

# Q No 70

**Best mode of RT for Ca Oesophagus**

a. 2D RT
b. 3D CRT
c. IMRT
d. IGRT

**Ans: D**

# THANK YOU