



TALLER VMAT

DOSIMETRÍA RECTO

Andrés Alarcón F.
Tecnólogo Médico

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PROTOCOLO

1) PRESCRIPCIÓN:		
a) PTV1	Ideal	Aceptable
=> 45 Gy / 25 Fx de 1,8 Gy		
V45	≥ 95%	≥ 90%
D95%	≥ 42,75 Gy (95% dosis)	≥ 40,5 Gy (90% dosis)
D98% (Dnear Min)	≥ 40,5 Gy (90% dosis)	≥ 38,25 Gy (85% dosis)
D2%	≤ 48,15 Gy (107% dosis)	D5% ≤ 49,5 Gy (110% dosis)
2) OARs:		
a) Cabeza Femoral Derecha:		
V30	≤ 50%	
V40	≤ 35%	
V44	≤ 5%	≤ 10%
b) Cabeza Femoral Izquierda:		
V30	≤ 50%	
V40	≤ 35%	
V44	≤ 5%	≤ 10%
c) Saco Intestinal:		
V30	≤ 400 cc	
V35	≤ 300 cc	≤ 600 cc
V45	≤ 40 cc	≤ 60 cc
d) Vejiga		
V35	≤ 50%	≤ 70%
V40	≤ 35%	≤ 50%
V50	≤ 5%	≤ 10%
e) Piel:		
Dmax (0,03cc)	< 40 Gy	< 45 Gy

TABLA DE OPTIMIZACIÓN

IMRT Constraints

↑ ↓ Pareto **Constrained** IMRT Parameters

Structure	Cost Function	Enabled	Status	Manual	Weight	Reference Dose (cGy)	Multicriterial	Isoconstraint
PTV	Target Penalty	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.00			4500.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.10	4600.0		110.0
SacoIntestinal-PTV	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	4450.0	<input type="checkbox"/>	10.0
SacoIntestinal	Maximum Dose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.05			4500.0
Vejiga	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01		<input type="checkbox"/>	4500.0
	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01		<input type="checkbox"/>	3500.0
patient	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	4500.0	<input type="checkbox"/>	10.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	4000.0	<input type="checkbox"/>	30.0
	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.07		<input type="checkbox"/>	2300.0

RESULTADOS

1) PRESCRIPCIÓN:				
a) PTV1	Ideal	Aceptable	3D	VMAT
=> 45 Gy / 25 Fx de 1,8 Gy				
V45	≥ 95%	≥ 90%	95.1%	95.0%
D95%	≥ 42,75 Gy (95% dosis)	≥ 40,5 Gy (90% dosis)	45 Gy	45 Gy
D98% (Dnear Min)	≥ 40,5 Gy (90% dosis)	≥ 38,25 Gy (85% dosis)	44,3 Gy	44,8 Gy
D2%	≤ 48,15 Gy (107% dosis)	D5% ≤ 49,5 Gy (110% dosis)	47,6 Gy	47,9 Gy
2) OARs:				
a) Cabeza Femoral Derecha:				
V30	≤ 50%		32.6%	9.6%
V40	≤ 35%		4.5%	2.2%
V44	≤ 5%	≤ 10%	2.0%	0.3%
b) Cabeza Femoral Izquierda:				
V30	≤ 50%		32.7%	11.5%
V40	≤ 35%		2.4%	0.8%
V44	≤ 5%	≤ 10%	0.6%	0.0%
c) Saco Intestinal:				
V30	≤ 400 cc		425cc	394cc
V35	≤ 300 cc	≤ 600 cc	339cc	297cc
V45	≤ 40 cc	≤ 60 cc	160cc	92cc
d) Vejiga				
V35	≤ 50%	≤ 70%	59.1%	63.8%
V40	≤ 35%	≤ 50%	50.7%	52.9%
V50	≤ 5%	≤ 10%	0.0%	0.0%
e) Piel:				
Dmax (0,03cc)	< 40 Gy	< 45 Gy	34,3 Gy	40,6 Gy
Indice de Conformación			0.7	0.9



TALLER VMAT

DOSIMETRÍA CANAL ANAL

Andrés Alarcón F.
Tecnólogo Médico

31 ENERO 2018

PROTOCOLO

1) PRESCRIPCIÓN: (RTOG 0529 - modif)		
a) PTV1 (Mesorrecto + LN):	Ideal	Aceptable
=> 45 Gy / 30 Fx de 1,5 Gy		
V45	≥ 90%	≥ 85%
D95%	≥ 42,75 Gy (95% dosis)	≥ 40,5 Gy (90% dosis)
D98% (Dnear Min)	≥ 40,5 Gy (90% dosis)	≥ 38,25 Gy (85% dosis)
D2% de PTV1 - PTV2 (Dnear Max)	≤ 51,75 Gy (115% dosis)	D5% ≤ 51,75 Gy (115% dosis)
b) PTV2 (ADP ≤ 3 cm + margen):		
=> 50,4 Gy / 30 Fx de 1,68 Gy (SIB)		
V50,4	≥ 90%	≥ 85%
D95%	≥ 47,88 Gy (95% dosis)	≥ 45,36 Gy (90% dosis)
D98% (Dnear Min)	≥ 45,36 Gy (90% dosis)	≥ 42,84 Gy (85% dosis)
D2% de PTV2 - PTV3 (Dnear Max)	≤ 57,96 Gy (115% dosis)	D5% ≤ 57,96 Gy (115% dosis)
c) PTV3 (Tu + ADP > 3 cm + margen):		
=> 54 Gy / 30 Fx de 1,8 Gy (SIB)		
V54	≥ 90%	≥ 85%
D95%	≥ 51,3 Gy (95% dosis)	≥ 48,6 Gy (90% dosis)
D98% (Dnear Min)	≥ 48,6 Gy (90% dosis)	≥ 45,9 Gy (85% dosis)
D2% (Dnear Max)	≤ 62,1 Gy (115% dosis)	D5% ≤ 62,1 Gy (115% dosis)

PROTOCOLO

2) OARs:	Ideal	Aceptable
a) Cabeza Femoral Derecha:		
V30	≤ 50%	
V40	≤ 35%	
V44	≤ 5%	≤ 10%
b) Cabeza Femoral Izquierda:		
V30	≤ 50%	
V40	≤ 35%	
V44	≤ 5%	≤ 10%
c) Saco Intestinal:		
V30	≤ 400 cc	
V35	≤ 300 cc	≤ 600 cc
V45	≤ 40 cc	≤ 60 cc
d) Crestas Iliacas		
V30	≤ 50%	≤ 70%
V40	≤ 35%	≤ 50%
V50	≤ 5%	≤ 10%
e) Vejiga		
V35	≤ 50%	≤ 70%
V40	≤ 35%	≤ 50%
V50	≤ 5%	≤ 10%
f) Piel:		
Dmax (0,03cc)	< 40 Gy	< 50,4 Gy si ADP ing. (+)
*** Aceptar dosis mayores si piel (+)		
g) Genitales:		
V20	≤ 50%	≤ 70%
V30	≤ 35%	≤ 50%
V40	≤ 5%	≤ 10%
V50		

TABLA DE OPTIMIZACIÓN

IMRT Constraints									
↑ ↓ Pareto Constrained IMRT Parameters									
Structure	Cost Function	Enabled	Status	Manual	Weight	Reference Dose (cGy)	Multicriterial	Isoconstraint	
PTV3:anal 54	Target Penalty	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.00				5400.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.55	5778.0			8.0
PTV2-3	Target Penalty	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.00				5040.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	5.91	5450.0			50.0
PTV1-2	Target Penalty	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.00				4500.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	12.23	4815.0			70.0
CyC FemoralDer	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	3.44		<input type="checkbox"/>		3160.0
CyC FemoralIzq	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	1.77		<input type="checkbox"/>		3160.0
SacoInt-PTV	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	36.96		<input type="checkbox"/>		2740.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	4.69	4500.0	<input type="checkbox"/>		5.0
Vejiga-PTV	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	7.74		<input type="checkbox"/>		3840.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.08	5000.0	<input type="checkbox"/>		2.0
Crestas iliacas	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.46		<input type="checkbox"/>		3050.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	5000.0	<input type="checkbox"/>		2.0
Vulva-PTV	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.83		<input type="checkbox"/>		3250.0
PIEL	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	5000.0	<input type="checkbox"/>		2.0
patient	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01	5400.0	<input type="checkbox"/>		2.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	34.47	4400.0	<input type="checkbox"/>		20.0
	Quadratic Overdose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	67.97	3400.0	<input type="checkbox"/>		70.0
	Serial	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	64.69		<input type="checkbox"/>		2590.0
	Maximum Dose	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.15				5880.0
	Conformality	<input checked="" type="checkbox"/>	On	<input type="checkbox"/>	0.01		<input type="checkbox"/>		0.51

RESULTADOS

1) PRESCRIPCIÓN: (RTOG 0529 - modif)				
a) PTV1 (Mesorrecto + LN): => 45 Gy / 30 Fx de 1,5 Gy	Ideal	Aceptable	3D	VMAT
V45	≥ 90%	≥ 85%	97.90%	97.80%
D95%	≥ 42,75 Gy (95% dosis)	≥ 40,5 Gy (90% dosis)	46,2 Gy	46 Gy
D98% (Dnear Min)	≥ 40,5 Gy (90% dosis)	≥ 38,25 Gy (85% dosis)	44,9 Gy	44,9 Gy
D2% de PTV1 - PTV2 (Dnear Max)	≤ 51,75 Gy (115% dosis)	D5% ≤ 51,75 Gy (115% dosis)	D5% = 54,3 Gy	51,3 Gy
b) PTV2 (ADP ≤ 3 cm + margen): => 50,4 Gy / 30 Fx de 1,68 Gy (SIB)				
V50,4	≥ 90%	≥ 85%	88.70%	85%
D95%	≥ 47,88 Gy (95% dosis)	≥ 45,36 Gy (90% dosis)	47,7 Gy	48,6 Gy
D98% (Dnear Min)	≥ 45,36 Gy (90% dosis)	≥ 42,84 Gy (85% dosis)	44,8 Gy	47,5 Gy
D2% de PTV2 - PTV3 (Dnear Max)	≤ 57,96 Gy (115% dosis)	D5% ≤ 57,96 Gy (115% dosis)	56,9 Gy	56,6 Gy
c) PTV3 (Tu + ADP > 3 cm + margen): => 54 Gy / 30 Fx de 1,8 Gy (SIB)				
V54	≥ 90%	≥ 85%	98.60%	93.10%
D95%	≥ 51,3 Gy (95% dosis)	≥ 48,6 Gy (90% dosis)	55 Gy	53,7 Gy
D98% (Dnear Min)	≥ 48,6 Gy (90% dosis)	≥ 45,9 Gy (85% dosis)	54,2 Gy	53 Gy
D2% (Dnear Max)	≤ 62,1 Gy (115% dosis)	D5% ≤ 62,1 Gy (115% dosis)	58 Gy	57,7 Gy

2) OARs:	Ideal	Aceptable		
a) Cabeza Femoral Derecha:				
V30	≤ 50%		34,60%	50%
V40	≤ 35%		20,70%	4,60%
V44	≤ 5%	≤ 10%	15,80%	1%
b) Cabeza Femoral Izquierda:				
V30	≤ 50%		34,20%	52,80%
V40	≤ 35%		21,70%	5,37%
V44	≤ 5%	≤ 10%	15%	1,50%
c) Saco Intestinal:				
V30	≤ 400 cc		635cc	564cc
V35	≤ 300 cc	≤ 600 cc	610cc	486cc
V45	≤ 40 cc	≤ 60 cc	528cc	290cc
d) Crestas Iílicas				
V30	≤ 50%	≤ 70%	45,40%	42%
V40	≤ 35%	≤ 50%	34%	17%
V50	≤ 5%	≤ 10%	13,10%	2,30%
e) Vejiga				
V35	≤ 50%	≤ 70%	95,10%	90,80%
V40	≤ 35%	≤ 50%	89,10%	78%
V50	≤ 5%	≤ 10%	71,50%	33,10%
f) Piel:				
Dmax (0,03cc)	< 40 Gy	< 50,4 Gy si ADP ing. (+)	50,1 Gy	50 Gy
*** Aceptar dosis mayores si piel (+)				
g) Genitales:				
V20	≤ 50%	≤ 70%	80,20%	90,50%
V30	≤ 35%	≤ 50%	54,50%	65,70%
V40	≤ 5%	≤ 10%	33,50%	31,20%
V50			16,30%	11,10%
Indice de Conformación				
		PTV1	0,47	0,69
		PTV2	0,45	0,76
		PTV3	0,11	0,3