

Unraveling Biophysical Interactions of Radiation Pneumonitis in Non-Small-Cell Lung Cancer via Bayesian Network

Analysis

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Appendix F: Conditional probability table to predict RP2 before and during treatment

Table F1. The table of conditional probabilities $P(\text{RP2} | \text{Lung_gEUD}, \text{miR_191_5p}, \text{and pre_IL_15})$

Lung_gEUD	[4.35, 13.6]								
miR_191_5p	[5.46e-05, 0.000804]			(0.000804, 0.00227]			(0.00227, 0.141]		
pre_IL_15	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]
RP2 (No)	99.669	99.669	50	99.669	99.751	99.669	99.669	66.556	99.02
RP2 (Yes)	0.33113	0.33113	50	0.33113	0.24876	0.33113	0.33113	33.444	0.98039
Lung_gEUD	(13.6, 17.8]								
miR_191_5p	[5.46e-05, 0.000804]			(0.000804, 0.00227]			(0.00227, 0.141]		
pre_IL_15	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]
RP2 (No)	74.876	99.669	99.505	66.556	0.98039	99.751	99.505	25.124	33.444
RP2 (Yes)	25.124	0.33113	0.49505	33.444	99.02	0.24876	0.49505	74.876	66.556
Lung_gEUD	(17.8, 21.2]								
miR_191_5p	[5.46e-05, 0.000804]			(0.000804, 0.00227]			(0.00227, 0.141]		
pre_IL_15	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]	[0.11, 3.16]	(3.16, 10.9]	(10.9, 340]
RP2 (No)	99.801	50	50	99.02	99.669	74.876	0.49505	99.02	0.16611
RP2 (Yes)	0.1992	50	50	0.98039	0.33113	25.124	99.505	0.98039	99.834

Table F2. The table of conditional probabilities $P(\text{RP2} | \text{Lung_gEUD}, \text{miR_191_5p}, \text{pre_IL_15}, \text{and SLP_TGF_beta1})$

Lung_gEUD	[4.35, 13.6]								
miR_191_5p	[5.46e-05, 0.000804]								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340]		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]
RP2 (No)	99.02	99.02	99.02	50	99.505	99.02	99.02	50	0.98039
RP2 (Yes)	0.98039	0.98039	0.98039	50	0.49505	0.98039	0.98039	50	99.02
Lung_gEUD	[4.35, 13.6]								
miR_191_5p	(0.000804, 0.00227]								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340]		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]
RP2 (No)	50	50	99.669	99.505	99.02	99.02	99.505	99.02	50
RP2 (Yes)	50	50	0.33113	0.49505	0.98039	0.98039	0.49505	0.98039	50
Lung_gEUD	[4.35, 13.6]								
miR_191_5p	(0.00227, 0.141]								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340]		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]
RP2 (No)	99.02	99.02	99.02	66.556	50	50	99.02	50	50
RP2 (Yes)	0.98039	0.98039	0.98039	33.444	50	50	0.98039	50	50
Lung_gEUD	(13.6, 17.8]								
miR_191_5p	[5.46e-05, 0.000804]								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340]		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]	[-13.5, -1.78]	(-1.78, -0.21]	(-0.21, 6.63]
RP2 (No)	50	50	99.505	99.02	99.505	50	50	99.505	50
RP2 (Yes)	50	50	0.49505	0.98039	0.49505	50	50	0.49505	50
Lung_gEUD	(13.6, 17.8]								
miR_191_5p	(0.000804, 0.00227]								

pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340)		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)
RP2 (No)	99.505	0.98039	50	0.98039	50	50	99.02	99.505	99.02
RP2 (Yes)	0.49505	99.02	50	99.02	50	50	0.98039	0.49505	0.98039
Lung_gEUD	(13.6, 17.8)								
miR_191_5p	(0.00227, 0.141)								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340)		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)
RP2 (No)	99.02	99.02	50	0.98039	0.49505	99.02	50	50	33.444
RP2 (Yes)	0.98039	0.98039	50	99.02	99.505	0.98039	50	50	66.556
Lung_gEUD	(17.8, 21.2)								
miR_191_5p	[5.46e-05, 0.000804]								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340)		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)
RP2 (No)	50	99.02	99.751	0.98039	99.505	0.98039	50	50	50
RP2 (Yes)	50	0.98039	0.24876	99.02	0.49505	99.02	50	50	50
Lung_gEUD	(17.8, 21.2)								
miR_191_5p	(0.000804, 0.00227)								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340)		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)
RP2 (No)	50	99.02	50	99.505	99.02	50	99.505	99.02	0.98039
RP2 (Yes)	50	0.98039	50	0.49505	0.98039	50	0.49505	0.98039	99.02
Lung_gEUD	(17.8, 21.2)								
miR_191_5p	(0.00227, 0.141)								
pre_IL_15	[0.11, 3.16]			(3.16, 10.9)			(10.9, 340)		
SLP_TGF_beta1	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)	[-13.5, -1.78]	(-1.78, -0.21)	(-0.21, 6.63)
RP2 (No)	50	0.98039	0.98039	50	99.02	50	0.98039	0.98039	0.24876
RP2 (Yes)	50	99.02	99.02	50	0.98039	50	99.02	99.02	99.751