|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Patient** | **Age** | **Prescription, Gy** | **Technique** | **Number of isocenters** | **PTV D90** | **Dmax** | **PTV V110%** | **Lungs Dmean, Gy** | **Lungs Dmean,% VMAT** | **Lungs-1cm Dmean, %** | **Kidneys Dmean, %** | **Testes/ovaries Dmean, Gy** | **Testes/ovaries Dmax, Gy** | **Brain Dmean, %** | **Brain-1cm Dmean, %** | **Thyroid, Dmean, Gy** |
| Patient 1 | 3 | 2 | VMAT | 3 | 100.0% | 114.6% | 0.1% | 0.84 | 41.8% | 26.6% | 64.1% | 0.60 | 0.90 | 74.9% | 54.9% |  |
| Patient 2 | 6 | 12 | VMAT/AP | 4 | 100.0% | 120.5% | 2.2% | 6.996 | 58.3% | 37.3% | 64.2% |  |  |  |  |  |
| Patient 3 | 8 | 2 | VMAT/AP | 5 | 100.0% | 120.3% | 2.9% | 1.05 | 52.5% | 40.3% |  | 0.65 | 0.90 |  |  | 1.4 |
| Patient 4 | 4 | 2 | VMAT | 3 | 100.0% | 114.7% | 0.3% | 1.088 | 54.4% | 34.1% |  | 0.67 | 0.90 | 75.1% | 53.5% |  |
| Patient 5 | 8 | 2 | VMAT | 3 | 100.0% | 117.5% | 0.5% | 1.092 | 54.6% | 35.8% |  | 0.78 | 0.95 | 75.0% | 53.9% |  |
| Patient 6 | 8 | 12 | VMAT | 3 | 100.0% | 121.0% | 0.9% | 7.128 | 59.4% | 36.5% | 65.3% |  |  |  |  |  |
| Patient 7 | 17 | 12 | VMAT/AP | 5 | 100.0% | 127.3% | 5.3% | 7.176 | 59.8% | 45.7% | 73.3% | 0.60 | 0.87 | 80.1% | 61.4% | 1.5 |
| Patient 8 | 6 | 2 | VMAT | 3 | 100.0% | 120.4% | 1.6% | 1.198 | 59.9% | 37.5% | 72.6% |  |  |  |  |  |
| Patient 9 | 7 | 2 | VMAT/AP | 4 | 100.0% | 117.2% | 1.8% | 1.068 | 53.4% | 35.8% | 64.9% |  |  |  |  |  |
| Patient 10 | 7 | 12 | VMAT | 3 | 100.0% | 114.2% | 0.1% | 6.77 | 56.4% | 35.3% | 68.4% |  |  |  |  |  |
| **Average** | **7.4** |  |  |  | **100.0%** | **118.8%** | **1.6%** | **3.4** | **55.1%** | **36.5%** | **67.5%** | **0.66** | **0.90** | **76.3%** | **55.9%** | **1.5** |
| **Min** | **3** |  |  |  | **100.0%** | **114.2%** | **0.1%** | **0.8** | **41.8%** | **26.6%** | **64.1%** | **0.60** | **0.87** | **74.9%** | **53.5%** | **1.4** |
| **Max** | **17** |  |  |  | **100.0%** | **127.3%** | **5.3%** | **7.2** | **59.9%** | **45.7%** | **73.3%** | **0.78** | **0.95** | **80.1%** | **61.4%** | **1.5** |
| **SD** | **3.8** |  |  |  | **0.0%** | **4.0%** | **1.6%** | **3.1** | **5.4%** | **4.8%** | **4.0%** | **0.07** | **0.03** | **2.6%** | **3.7%** | **0.1** |

Table 1. Patient and dosimetric characteristics for VMAT TBI autoplans.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **VMAT TBI** | | | | | **2D TBI** | | | | | **Difference (VMAT-2D)** | | | | |
| **Patient** | **PTV D90** | **PTV Dmax** | **PTV V110%** | **Lungs Dmean, %** | **Lungs-1cm Dmean, %** | **PTV D90** | **PTV Dmax** | **PTV V110%** | **Lungs Dmean, %** | **Lungs-1cm Dmean, %** | **PTV D90** | **PTV Dmax** | **PTV V110%** | **Lungs Dmean, %** | **Lungs-1cm Dmean, %** |
| Patient 1 | 100.0% | 114.6% | 0.1% | 41.8% | 26.6% | 93.8% | 122.0% | 1.4% | 90.0% | 75.9% | 6.2% | -7.4% | -1.3% | -48.2% | -49.3% |
| Patient 2 | 100.0% | 120.5% | 2.2% | 58.3% | 37.3% | 91.3% | 122.5% | 0.7% | 86.7% | 82.1% | 8.8% | -2.0% | 1.5% | -28.4% | -44.8% |
| Patient 3 | 100.0% | 120.3% | 2.9% | 52.5% | 40.3% | 95.3% | 123.2% | 0.5% | 89.0% | 84.0% | 4.7% | -2.9% | 2.4% | -36.5% | -43.7% |
| Patient 4 | 100.0% | 114.7% | 0.3% | 54.4% | 34.1% | 90.0% | 118.5% | 0.4% | 81.9% | 73.0% | 10.0% | -3.8% | -0.1% | -27.5% | -38.9% |
| Patient 5 | 100.0% | 117.5% | 0.5% | 54.6% | 35.8% | 93.4% | 112.8% | 1.9% | 80.8% | 70.4% | 6.6% | 4.8% | -1.4% | -26.2% | -34.6% |
| Patient 6 | 100.0% | 121.0% | 0.9% | 59.4% | 36.5% | 95.8% | 115.6% | 0.2% | 75.4% | 62.6% | 4.3% | 5.4% | 0.7% | -16.0% | -26.1% |
| Patient 7 | 100.0% | 127.3% | 5.3% | 59.8% | 45.7% | 95.0% | 112.9% | 1.8% | 72.0% | 64.1% | 5.0% | 14.5% | 3.5% | -12.2% | -18.4% |
| Patient 8 | 100.0% | 120.4% | 1.6% | 59.9% | 37.5% | 92.6% | 111.0% | 0.0% | 72.0% | 61.2% | 7.4% | 9.4% | 1.6% | -12.1% | -23.7% |
| Patient 9 | 100.0% | 117.2% | 1.8% | 53.4% | 35.8% | 98.5% | 118.2% | 8.6% | 84.2% | 69.4% | 1.5% | -1.0% | -6.8% | -30.8% | -33.6% |
| Patient 10 | 100.0% | 114.2% | 0.1% | 56.4% | 35.3% | 93.4% | 111.2% | 0.0% | 74.3% | 63.4% | 6.6% | 3.1% | 0.1% | -17.8% | -28.1% |
| **Average** | **100.1%** | **118.3%** | **1.7%** | **55.1%** | **36.5%** | **93.9%** | **116.8%** | **1.5%** | **80.6%** | **70.6%** | **6.1%** | **2.0%** | **0.0%** | **-25.6%** | **-34.1%** |
| **Min** | **100.0%** | **113.9%** | **0.0%** | **41.8%** | **26.6%** | **90.0%** | **111.0%** | **0.0%** | **72.0%** | **61.2%** | **1.5%** | **-7.4%** | **-6.8%** | **-48.2%** | **-49.3%** |
| **Max** | **100.7%** | **123.5%** | **6.2%** | **59.9%** | **45.7%** | **98.5%** | **123.2%** | **8.6%** | **90.0%** | **84.0%** | **10.0%** | **14.5%** | **3.5%** | **-12.1%** | **-18.4%** |
| **SD** | **0.2%** | **3.7%** | **2.1%** | **5.4%** | **4.8%** | **2.4%** | **4.8%** | **2.6%** | **6.9%** | **8.1%** | **2.4%** | **6.7%** | **2.9%** | **11.5%** | **10.1%** |
| **p-value** |  | | | | | | | | | | 8.11E-06\* | 0.226 | 0.444 | 2.96E-05\* | 1.02E-06\* |

Table 2: Comparison between VMAT and 2D TBI target and lung dosimetric indices for ten patients.