CLAIMS

1. Use of radium-224 atoms in the manufacture of a medicament for the treatment of a pancreatic cancer tumor of a patient, wherein :

the radium-224 atoms are to be coupled to supports having a length of at least 1 millimeter and implanted, such that not more than 20% of the radium-224 atoms are to leave their respective support into the tumor in 24 hours, without decay, when the source is implanted in the tumor, but upon decay, at least 5% of daughter radionuclides of the radium-224 atoms are to leave the support upon decay;

characterized in that

the radium-224 atoms on the sources have a radon release rate of between 1.2 and 2.5 microcurie per centimeter length.

2. The use of claim 1, wherein the radium-224 atom sources are to be implanted in the pancreatic cancer tumor throughout the tumor, with a spacing between the sources of between 3 and 4.5 millimeters.

3. The use of claim 2, wherein the radium-224 atom sources are to be implanted in the pancreatic cancer tumor throughout the tumor, with a spacing between the sources of between 3.1 and 3.9 millimeters.

4. The use of claims 1-3, wherein the radium-224 atoms on the sources have a radon release rate of between 1.2 and 1.85 microcurie per centimeter length.

5. The use of claims 1-3, wherein the radium-224 atoms on the sources have a radon release rate of between 1.4 and 1.9 microcurie per centimeter length.

6. The use of claims 1-3, wherein the radium-224 atoms on the sources have a radon release rate of between 2.1 and 2.5 microcurie per centimeter length.

7. The use of any of claims 1-6, wherein the radium-224 atom sources are to be implanted in the pancreatic cancer tumor throughout the tumor, in a hexagonal arrangement, each source separated from its neighboring sources in the array by not more than 4 millimeters.

8. A method of preparing a radiotherapy treatment, comprising:

identifying a tumor as a pancreatic cancer tumor;

receiving input on the pancreatic cancer tumor; and

providing one or more of:

a layout of diffusing alpha-emitter radiation therapy (DaRT) sources for the pancreatic cancer tumor, and

a kit including a determined number of radiotherapy sources required for the pancreatic cancer tumor,

wherein the sources have a radon release rate of between 1.2 and 2.5 microcurie per centimeter length.

9. The method of claim 8, wherein receiving input on the pancreatic cancer tumor comprises receiving an image of the tumor.

10. The method of claim 9, wherein providing the layout comprises providing a layout in which a spacing between sources in the tumor is 4 millimeters or less.

11. The method of claim 8, further comprising determining a number of sources required such that the area of the tumor is covered by sources with a spacing between the sources which is not greater than 4 millimeters.

12. The method of claim 8, further comprising determining a number of sources required such that the area of the tumor is covered by sources with a spacing between the sources of between 3.1-3.9 millimeters.

13. The method as in any of claims 8-12, wherein the sources have a radon release rate of between 1.4 and 1.9 microcurie per centimeter length.

14. The method as in any of claims 8-12, wherein the sources have a radon release rate of between 2.1 and 2.5 microcurie per centimeter length.