

[89] ALPHA DART: A NOVEL EFFECTIVE AND SAFE ALPHA RADIATION BASED RADIOTHERAPY

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- **Investment Rational**

Cancer is a devastating disease with a death toll of eight million per year, 5.3 million of them in developing countries. This emphasizes the need for developing sophisticated and inexpensive treatments. Alpha Tau Medical developed an innovative, effective, easy to use and safe medical device for radiotherapy of solid malignant tumors (Alpha DaRT). Alpha DaRT is currently the only available radiotherapy which enables to treat the entire volume of solid tumors by alpha radiation and holds significant potential for treatment of non-resectable human cancers.

- **Core Technology**

Diffusing Alpha emitters Radiation Therapy (Alpha DaRT) is delivered by intra-tumoral Radium-224 loaded seeds (Alpha DaRT seeds). The inserted seeds release by recoil short-lived alpha-emitting atoms, which disperse in the tumor and irradiate a sizable fraction of it with destructive alpha radiation.

- Preclinical studies with ten different mouse derived tumors and human derived tumors, resulted in tumor necrosis, retarded tumor growth, extended animal survival, reduced lung metastases and enhanced anti-tumor immunity. Alpha DaRT effects were amplified by chemotherapy and immunotherapy.

- **Product Profile/Pipeline**

Alpha Tau Medical will provide Alpha DaRT Kits which are composed of Alpha DaRT applicators loaded with alpha DaRT seeds. The seeds which are injected into the tumor, carry radium-224 atoms which release into the tumors alpha emitting atoms for several days.

- **What's Next?**

A facility to produce Alpha DaRT seeds and applicators for clinical trials in patients with squamous cell, colon, prostate, breast, gynecological and pancreatic cancers was built. Two clinical trials started in Israel and Italy, and in preparation are trials in eight centers in France (Gustave Roussy), Italy (La Sapienza), Romania, Germany, and USA (Memorial Sloan Kettering). By the end of 2017 we expect to receive a CE mark, and start sales in Europe in 2018 and in the USA during 2019.

