Advanced Oncotherapy (AVO-GB)
Accelerated speed and energy of LIGHT

KEY TAKEAWAY

LIGHT is well on track to replace obsolete cyclotrons. The company has issued a technological update this morning with a number of step changes. AVO is on an accelerated development progress and the new technical management team and funding is bearing fruits. AVO can well take the entire growth from its cyclotron competitors, which will become an obsolete technology by 2023E, in our view. Subsequently, proton technology could finally fulfil its initial promises to replace conventional LINACs. These promises led only to disappointments with a series of profit warnings from PT cyclotron manufacturers. AVO has turned the corner at the beginning of this year and is on a strong trajectory to deliver on its promises. The investment proposition is highly attractive at this stage. We strongly maintain and reiterate both our OUTPERFORM recommendation and TP of 155 GBp.

Progress of AVO’s experimental beam at CERN - 52MeV achieved - We remind investors, that the ADAM team at CERN is comprised of some of the world best physicists, who have not only taken on development, but also technical guidance on development timelines. We had hardly seen any setbacks since the ADAM team participates in communication with investors. We see a fully aligned management team at AVO. The milestone of arriving at 52MeV exceeds the energy levels the team has achieved on 28th of September this year by almost 100%. AVO will add 13 further Coupled Cavity Linacs (“CCL”) to arrive at the final required energy level of 250 MeV, which we expected in H1/2019E.

RaySearch partnership is expanding - best in class oncology information system. The treatment of cancer patients is still a flawed process and system integration is far from where it should be. Software is the key differentiation factor for the integration of all treatment modalities and its medical instruments. The partnership with RaySearch, a Swedish radiotherapy software company has not only the best in class treatment planning system (“TPS”), but also launched a superior oncology information system (“OIS”). The system integration of LIGHT in a combination of TPS and OIS goes far beyond a optimal use of proton therapy systems (“PT”). AVO might be the first instrument player who has the opportunity to be part of a fully integrated and holistic oncology treatment process. We feel that would be a significant progress in a world of evidence-based medicine and health economical approaches.

Harley Street and Daresbury well on track - The Harley Street project, AVO’s first customer is well on track. The experimental site in Daresbury, UK, where the machine will be installed, tested and then dismantled and set up in Harley Street, is also well on track. We expect on-going updates on its timelines and assume share price momentum along with positive news flow. Given the 2018 track record, we view the risk of delays time lines and setbacks as limited at this stage.

LIGHT will first erode cyclotron growth and then replace conventional LINACs. We believe the cyclotron machines will render obsolete by 2025, when the more nimble and technical superior PT Linac is commercially viable. LIGHT is likely to fulfil PTs promises at the beginning of the decade. As a reminder, the cyclotron technology involves lengthy and complicated building preparation. Heavy cyclotrons and large concrete bunkers make the installation a major building project, which is, regardless of pricing, often a big hurdle. The advantage of LIGHT being faster and less complicated combined with a cheaper production process and a nimbler way of modulating the beam, could give the company a fast head-start with a future margin expansion opportunity driven by an attractive service revenue stream.

The Proton therapy industry offers significant structural growth. We assume a PT conversion rate of 15% by 2030E, which would make it a c.$8.0bn market ($4.5bn for 380 machines in that year sold and $3.5bn for the service of all machines installed up to 2030E (c.2,900 PT vs. c.16,500 conventional PT machines)). Medtech as a whole has lost its steam due to lack of innovation, followed by price pressure from payers, who no longer pay top dollar for commoditised devices and instruments. We believe that AVO offers a great opportunity for a Medtech outperformer.

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COMPANY DESCRIPTION

Advanced Oncotherapy plc, together with its subsidiaries, focuses on providing radiotherapy systems for cancer treatment through the use of a novel proton therapy technology to healthcare providers and hospitals. It is developing Linac Image Guided Hadron technology, a next generation of proton therapy system for treating cancer. The company was formerly known as CareCapital Group plc and changed its name to Advanced Oncotherapy plc in September 2012. Advanced Oncotherapy plc was incorporated in 2005 and is headquartered in London, the United Kingdom.

SCENARIOS

**Base Case - GP Investment Case**
Proton therapy penetrates the conventional radiation therapy market by 15% in 2030. AVO will be able to get a market share of around 15%. Price per treatment room will come down to $7.5m and accelerates sales growth.

**Bluesky Scenario**
Proton therapy penetrates at a faster pace and goes up to 30% or higher. AVO will maintain or increase market share in an oligopolistic market. Price per treatment rooms will be as high as $15m - scale effects improve margins.

**Downside risk**
Proton therapy penetrates at a slower pace and goes up to only 10% by 2030. AVO may have significant delays and its market share in PT remains low as a result (10%) in 2030. Competitors could develop a competing linac with a modular system.

SWOT

**Strength** - AVO has a promising modular system, which could be cheaper and faster installed in hospitals.

**Weakness** - The company is small in size, early stage and has a limited financial strength compared to its competitors IBA, Varian, Hitachi, etc.

**Opportunity** - Growing clinical evidence and patient driven demand could accelerate adoption rate more than expected.

**Threat** - Capital constraints on healthcare budgets and underwhelming evidence for PT could be replaced by carbon ion RT. Partnerships are instrumental for AVO’s success and there is a significant risk of terminations or delays.

INDUSTRY EXPECTATIONS

The industry is expected to benefit from a higher adoption rate for proton therapy fuelled by growing clinical evidence. Prices for treatment rooms are not that high when broken down on a per patient basis vs. modern drug therapy. Thus, prices for PT treatment rooms are expected to come down only moderately. Software and better of imaging is expected to improve beam delivery and help adoption rates.
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- (RAYSEARCH LABORATORIES AB (RAYB SS))
- Advanced Oncotherapy Plc (AVO-GB)
- Medical Technology (MT)

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