Biotech Daily

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Daily news on ASX-listed biotechnology companies

Dr Boreham's Crucible: Artrya

By TIM BOREHAM

ASX code: AYA

Share price*: $1.35; **Market cap*:** $105.4 million; **Shares on issue*:** 78,112,590

Chief executive officer: John Barrington

Board:** Bernard (Bernie) Ridgeway (chairman), Mr Barrington, John Konstantopoulos (co-founder and director of product)

Financials (year to June 30, 2021): revenue nil, other income $210,000 (down 48%), loss of $4.08 million (previously a $1.35 million deficit), cash of $12.98 million***

Identifiable major holders: John Barrington/BHT Family Trust 9.93%, Erika Konstantopoulos/IEMK Family Trust 8.96%, Keeble Nominees (Ridgeway self-managed super fund) 2.56%

* Proforma values ahead of ASX listing scheduled for November 26

** An executive search for a fourth director is in progress

*** Ahead of $40 million IPO

Heart disease remains the world's number one killer, yet the scourge remains under-appreciated relative to other major ailments such as cancer, Alzheimer's disease (increasingly) and - of course - Covid-19.

With the per-capita incidence of the disease stubbornly high, one could say that advocates of a healthy ticker aren't exactly winning the hearts and minds of Western world citizens.

According to the about-to-be listed Artrya, heart disease kills about 18 million people a year, the equivalent of the adult Australian population. As a subset, coronary arterial disease (CAD) afflicts 120 million people and kills nine million of them.

An algorithm-based artificial intelligence play, Artrya is zeroing-in on detecting vulnerable plaque, which is the build-up of lipids (fats) in the lumen (arterial tube).

Plaque goes on to form harder calcified deposits, which can lead to arterial blockages. But the underrated aspect of plaque is that it's soft and more prone to rupture.

The plaque is also difficult and time-consuming to see with the naked eye in traditional images.

While most of us have been more worried about (the) plague than the plaque, the Perth-based Artrya is developing a tool that detects the plaque deposits on x-ray computed tomography (CT) images.

"Early detection is very important and there is a major opportunity to address this major health issue," says Artrya co-founder and chief executive John Barrington.

The heart of the matter

On October 29, Artrya closed its over-subscribed $40 million initial public offer (IPO), ahead of its scheduled listing on the ASX on November 26.

The company was founded by Mr Barrington and fellow Perth native John Konstantopoulos.

The former has a background in IT, management consulting and fostering start-up entities, while Mr Konstantopoulos has a long tech background including applying IBM's smarts to healthcare uses.

Founded in 2018, Artrya is based on collaborations with the University of Western Australia, the Perth-based Harry Perkins Institute of Medical Research (of which Mr Barrington is a director) and the University of Ottawa Heart Institute.

"We spent 18 months researching where that advantage might best be applied, focusing on medical imaging and then heart diseases," Mr Barrington said.

A pilot product was delivered in December 2019, six months ahead of schedule.

Mr Barrington says the duo was fortunate to meet one of the world's leading researchers of vulnerable plaque, Prof Girish Dwivedi of the Harry Perkins Institute

"It was a partnership made in the cloud," Barrington says – an allusion to the wireless nature of the subscription-based tool.

Here's the problem …

Plaque is soft so it is vulnerable to rupture. Calcification is the progression of plaque over time which hardens and causes stenosis (arterial narrowing).

The scary thing about fatal heart attacks is that 50 percent of males and 64 percent of women have no warning at all that they are about to keel over.

About two-thirds of victims have no stenosis, which is routinely detected and reported. So contrary to accepted wisdom, it's not a major predictor of death. UK research suggests a plaque burden of more than just four percent increases the chances of death five-fold.

If plaque build-up is detected earlier, doctors can advise patients on lifestyle changes that usually involve cutting out the cigs and the whopper burgers. Drugs and stenting are also treatment options.

Artrya derives a risk score that measures calcification, stenosis and vulnerable plaques.

… and here's the answer

The company is spearheading its efforts with Salix Coronary Anatomy (SCA), which is a software adjunct to coronary computed tomography angiography (CCTA) scans.

The software is working and installed but not yet commercialized, having been included on Australian Register of Therapeutic Goods last year as a class 1 medical device.

The idea of the tool is to enable a personalized, three-dimensional heart model and diagnostic report to be presented to the patient immediately.

The report covers not just plaque, but calcification and 'positive remodelling'. The latter isn't a reference to a renovation reality show but rather the clever ability of lumens to grow in diameter to accommodate the plaque build-up.

Currently, the images produced by the CT scan are sent to a radiographer for annotation (there are up to 500 separate images). A radiologist then reviews the images and a typist prepares the report, which then goes back to the radiologist for approval.

"We are able to eliminate these intermediate steps," Mr Barrington says. "The report and 3-D model is presented to a radiologist within 15 minutes of scan completion."

With SCA, scans (400 to 500 x-ray images) are uploaded to the internet 'cloud' and artificial intelligence generates a report within 15 minutes.

"A 3-D image of the patient is presented so the clinician can sit with the patient and show them where the plaque is located and the severity of it," he says.

Mr Barrington says patients are more motivated to address the problem if they see the visual evidence in front of them.

Let’s get down to business

This week, Artrya said it had been accepted “as a supplier of artificial intelligence software and platforms” for the UK National Health Service Shared Business Services Framework.

Sales from the deal - which covers 1,250 hospitals - are expected in mid-2022.

Stepping back a bit, Artrya’s roll-out strategy is based on a Perth-based pilot and validation program.

Mr Barrington said the company had interstate pilot programs, with 20 programs “in various stages of discussions”.

The studies have been bolstered by Perth’s Envision Medical Imaging, which provided access to more than 20,000 CT scans.

Australian sales are expected from early 2022.

Of course, other Western markets are bigger and the company has also lodged approval submissions to the US Food and Drug Administration and European and UK device gatekeepers.

The patient benefits aside, the company’s pitch to clinics is that it’s making the practices more efficient by simplifying the reporting process and smoothing out work flows.

Mr Barrington says SCA is more about eliminating tasks than jobs. With a forecast shortage of 18,000 radiologists in the US alone, the tool will free-up time for them to liaise with their patients.

The tool is intended to reduce the usage of follow-up invasive coronary angiograms, which are uncomfortable, expensive, time-consuming and often unnecessary.

The company hopes to boost its commercial appeal with Salix Coronary Flow, which is a non-invasive assessment of coronary blood flow. This measurement can be included in the overall risk assessment presented to the patient.

“Now that Artrya has developed the core capabilities in plaque detection, it can expand into other diseases but right now we are focused on CAD,” Mr Barrington says.

Finances and performance

Artrya is no shrinking violet when it comes to attracting funds, having raised money on three previous occasions. A so-called ‘angel’ round in May 2019 brought in $1 million.

“The aim was to introduce a blue-chip shareholder base, not just the old ‘family, friends and fools’,” Mr Barrington says.

In May 2020, the company raised a further $2.8 million, having sought only $2 million.

Bell Potter then led a private placement in May this year. While only $10 million was sought, the round attracted $30 million of applications and the company took $15 million.

In 2020, the company pocketed a $1 million grant from the Federal Government's Biomed Tech Horizons Program

Pre-IPO, the company had $12.8 million in the bank. The raising - at $1.35 per share - boosts the cash kitty to $62.8 million.

Of the $40 million of IPO proceeds, $13.3 million will be earmarked for clinical research and development and regulatory activities over the next two years.

A further $9.5 million will be devoted to product development.

The company expects first revenue by next year.

Post-IPO, Mr Barrington will account for just shy of 10 percent of the register, with Mr Konstantopoulos speaking for another nine percent.

As per standard protocol, these holdings are escrowed for two years.

Pre-IPO investors include the ubiquitous Thorney Investments, SG Hiscock, Watermark Funds Management and Washington H Soul Pattinson.

Dr Boreham's diagnosis:

Artrya's potential is reflected in the fact that 11 million CT angiography scans are done in US and Europe each year, with 19.5 million forecast to take place by 2025.

Given artificial intelligence is a broad and emerging discipline, Mr Barrington says focus is important: "It's as much about what you're not going to do as what you are going to do."

In the short term, Artrya is about the boring-but-important stuff such as regulatory approvals and - more importantly - insurance reimbursement.

Mr Barrington is coy about the likely cost of the subscription-based product, but cites streaming giant Netflix as an exemplar.

Why? The subscription-based Netflix culled its rivals by coming in at an "effective price point".

Speaking of competition - and Netflix - Artrya won't have to engage in a Squid Games style fight to the death with rivals.

While Mr Barrington knows of two entities going down a similar path in China, he believes the company has first mover advantage in the Western world.

Of course, other rivals will emerge.

According to the mandatory risk factors outlined in the prospectus “there is uncertainty in relation to the quantum and timing of Artrya’s revenue, given the status of its research and early rollout of its Salix product”.

True, but your columnist believes there’s no reason Artrya can’t emulate the success of the ASX-listed, $300 million market cap Volpara Health Technologies which has commercialized an algorithm to detect breast cancers in difficult situations.

In that case, Artrya’s $100 million market valuation looks to be justified.

Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. He deserves to have a plaque erected in his honor for brushing his teeth daily to protect against plaque, but suspects that’s not quite the heart of the matter.