

Safer and Better Treatment for Stroke Patients

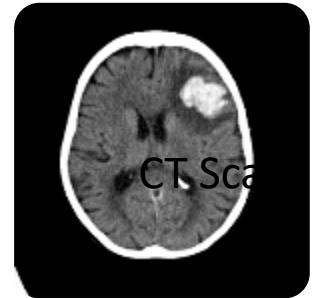
AquaTeX
Innovation for Neuro-Interventional Therapy

Neuro-interventional Treatment



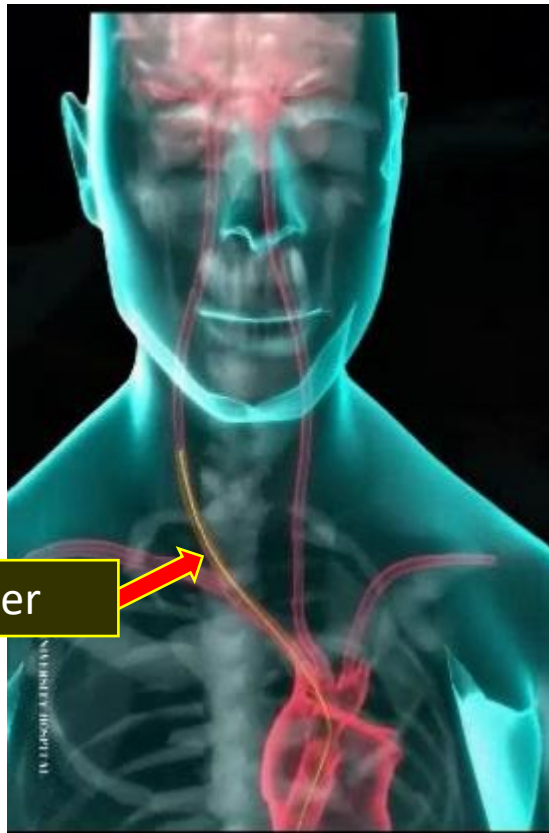
Imagine yourself in the emergency room of a hospital because one of your family members had a stroke.

A doctor shows up and says “your loved one has a **bleeding** in the brain, and we need to block the abnormal vessels to prevent the next bleeding.”

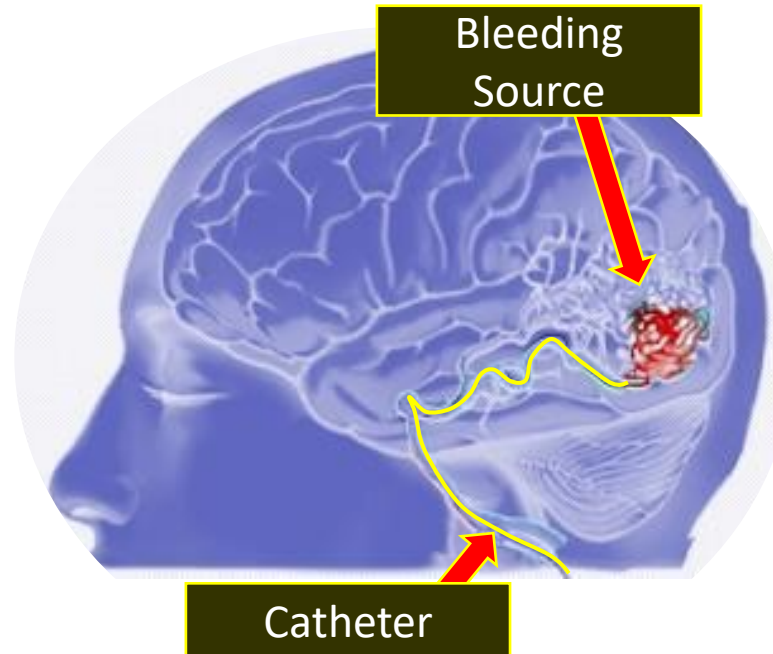


Neuro-interventional Treatment

Catheter Advancement



Catheter-based Treatment



Today, there is a new technology called neuro-intervention.

Instead of opening up the skull to reach the bleeding site, the source of bleeding can be treated using a catheter.

By accessing from a groin, a small catheter is advanced to the vessels in brain, and sometimes **a kind of glue** is injected to seal off the abnormal vessels.

The material is called **Liquid Embolic Material**

Currently Available Materials and Their Limitations.

There are two FDA approved Liquid Embolic Materials in the market.

NBCA







One of them is called NBCA, which is essentially a super glue. The problem is if a surgeon miss the timing of removing the catheter, it can get trapped in the brain, and can cause serious bleeding. FDA issued a safety alert.

Onyx



A newer version of the Liquid Embolic Material, so called Onyx, has much better handling. However FDA also issued a safety alert in 2012 after the reports of 100 complications, with half of them had catheter trapped in the brain, and 9 patients died. The company, also paid \$18 million to settle a legal issue filed by Dept. of Justice.

Currently Available Materials and Their Limitations.

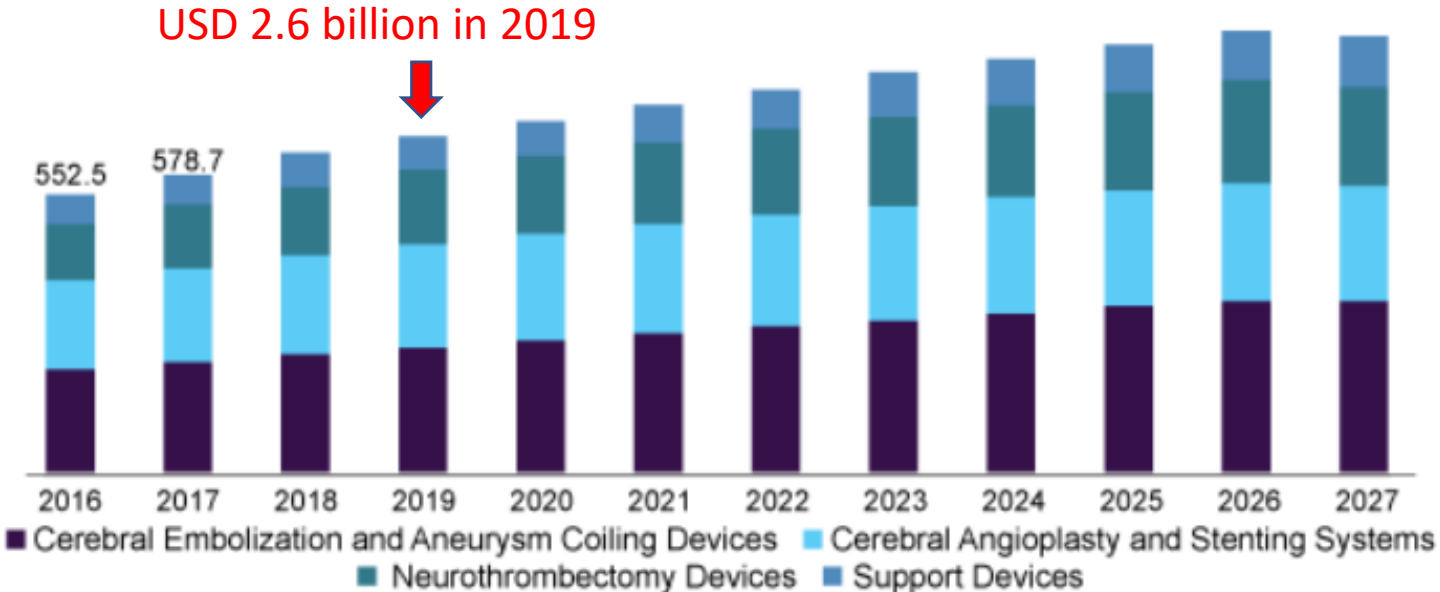
	 NBCA (Super Glue)	 Onyx
Company	 Johnson & Johnson	 Medtronic
Problems	Risk of Catheter trapped in the Brain (++)	Risk of Catheter trapped in the Brain (+)
FDA Issues	Safety Alert	Safety Alert
Legal Issues		Department of Justice (DOJ) Lawsuit \$17.9 million

Apparently, there is a safety issue related to this treatment method. Despite that, the number of patient treated with this treatment has been steadily increasing, Why?

Overall Market : Neuro-endovascular



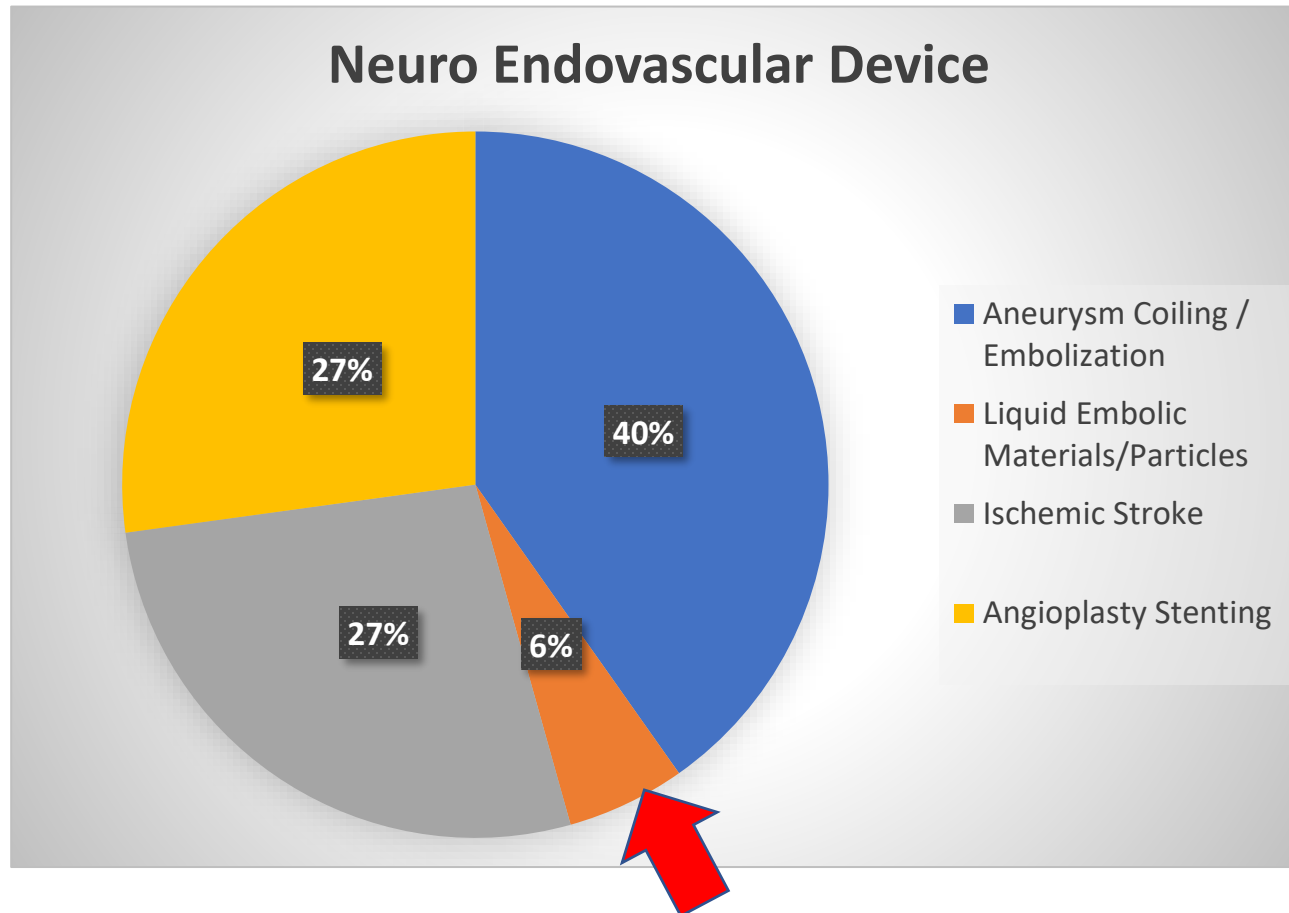
U.S. neurovascular devices market size, by device, 2016 - 2027 (USD Million)



Source: www.grandviewresearch.com

Market : Liquid Embolic Materials

The needs for the treatment using Liquid Embolic Material is growing.



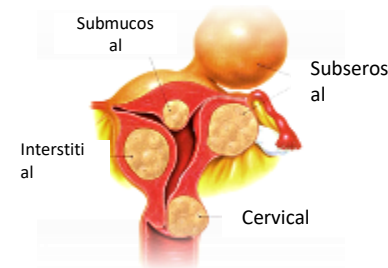
The market of Neuro-interventional Device is growing.
(\$ 2.6 billion in 2019)

The market of Liquid Embolic Material / Particles are estimated
= \$ 100 million / year

Other potential clinical applications

Superior Liquid Embolic Materials are desired in the field of non-neuro intervention (body intervention) as well

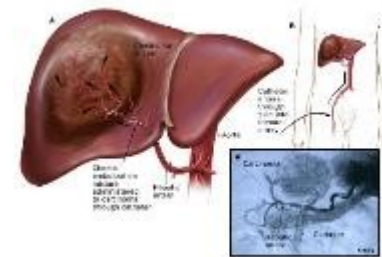
1) Treatment of Uterine fibroid



2) Treatment of Trauma / GI bleeding



3) Treatment of Hepatic Cancer

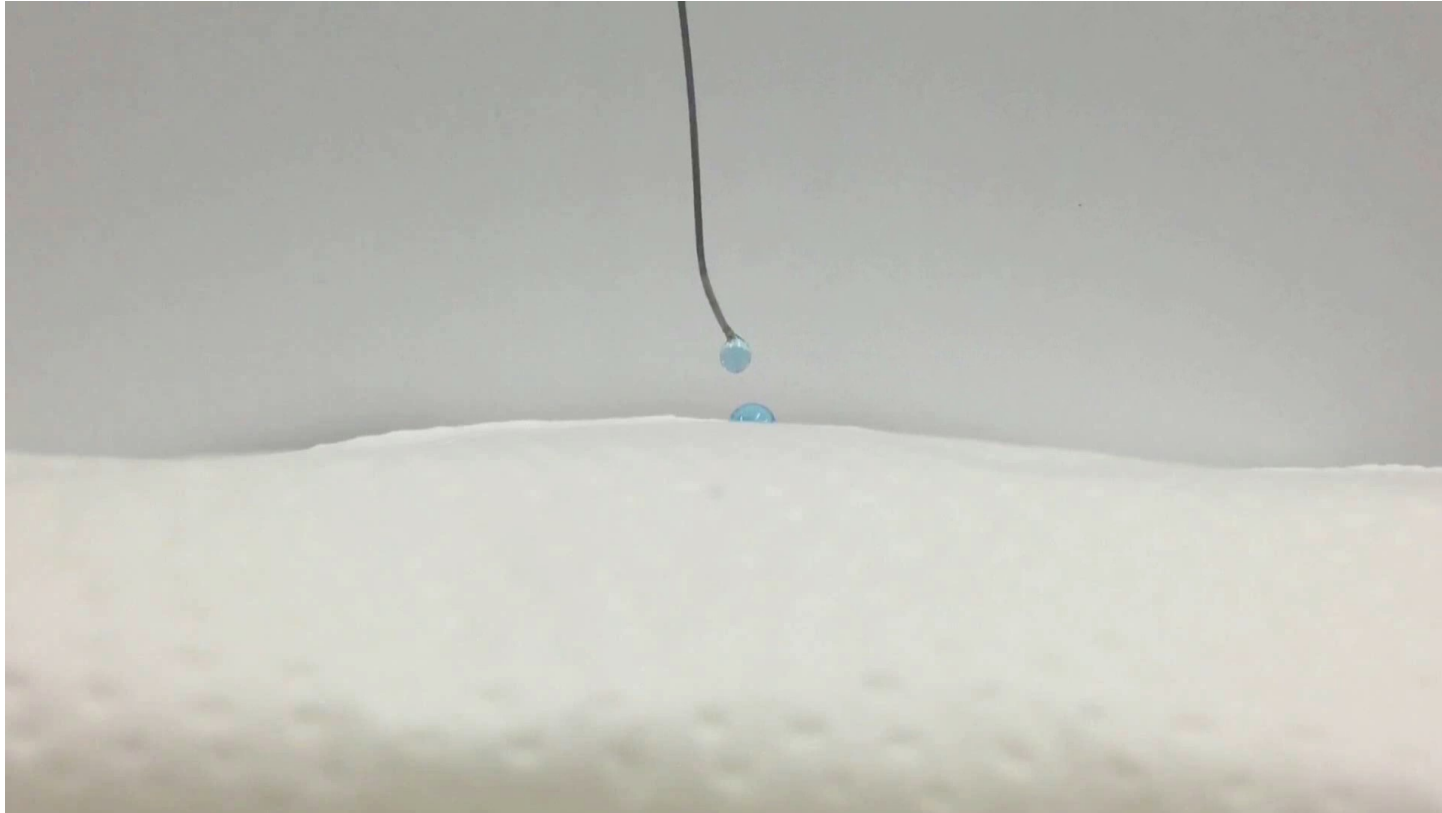


“The market size of body intervention is 10-15x larger than neuro intervention market”

Our Solution



Aqua Embolic System



- **Aqua Embolic System** is a liquid material that becomes solid once exposed to the low calcium ions in blood.
- **Superior Safety:** Never catches catheter because it forms an elastic hydrogel. (non-adhesiveness)
- **Superior bio-compatibility:** Main composition is an edible material often used as food additives.

Proof of Concept: *in vivo* evaluations

Animal Experiment using Rabbit model : 20 animals

Animal Experiment using Swine model : 4 animals



Aqua Embolic System has been evaluated using animal models (*in vivo* studies). Now the 55th version of the prototype, is considered the quality of MVP.

Our Team



Neuro-interventionalist

Ichiro Yuki MD
Clinical Associate Professor
UCI Medical Center



Polymer Scientist

Kousaku Ohkawa PhD

[Professor at the Institute for Fiber Engineering \(IFES\), Shinshu Univ., National Univ Corp., Japan](#)



Neuro-interventionalist

Director: Division
Shuichi Suzuki MD PhD
Professor
UCI Medical Center



Vascular Neurosurgeon

Chair : Department
Frank P.K. Hsu MD PhD
Professor
UCI Medical Center



The Co-founders of AquaTex Medical include two Neuro-interventionalists and one Vascular neurosurgeon with more than 20 years of experience. The materials, “Aqua Embolic System”, are designed and continuously modified by an outstanding polymer scientist in Japan.

Current Funding and Intellectual Property

- 7 years of research and development since conceptualization
- \$ 305,000 non-diluted funding
- 1 Issued Patent (PCT patent from Shinshu University, 2018)
1 Provisional Patent (UC Irvine, 2019)

Next Goals

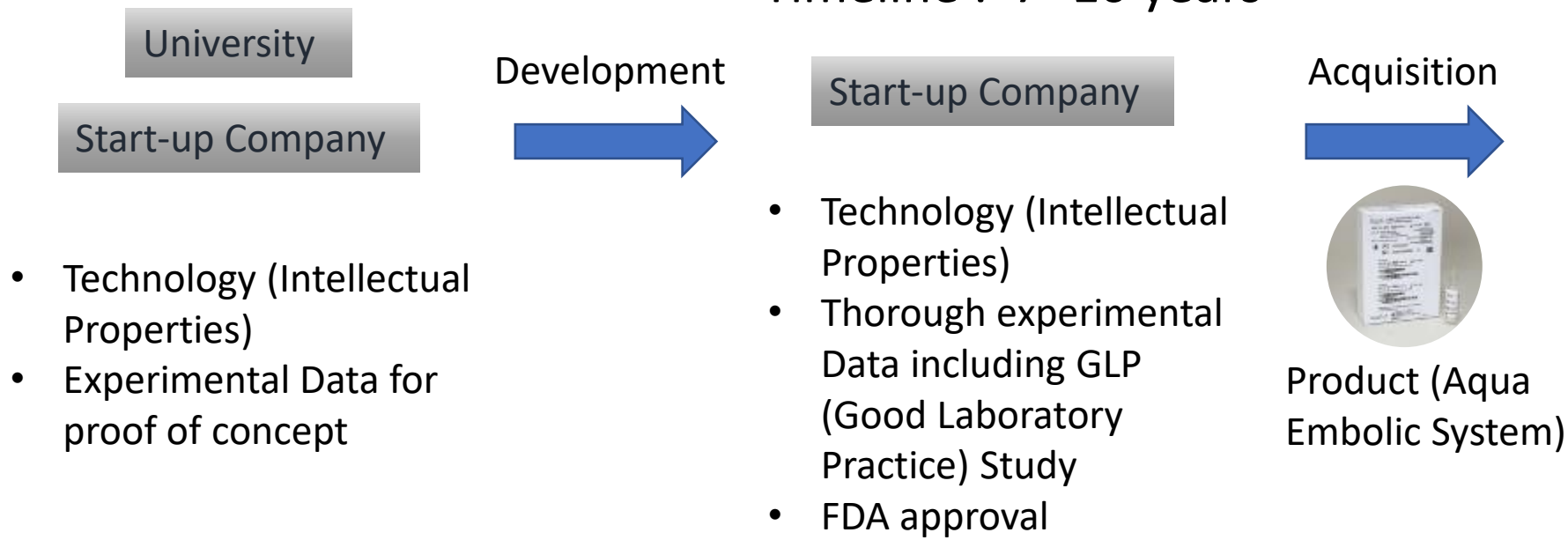
1. Preclinical evaluation using animal models : Long Term Results.
2. Good Laboratory Practice (GLP) study
3. Investigational Device Exempt (IDE) approval from FDA
4. Clinical Trials

We are seeking for:

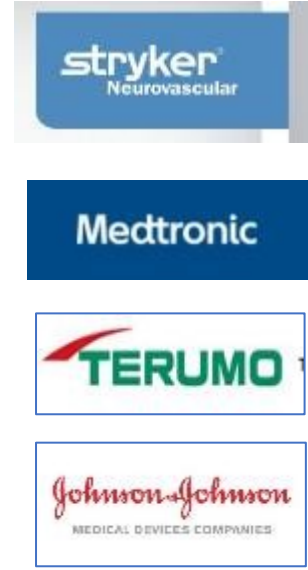
- **Seed funding** from **Angel Investors**, and **Venture Capitals**
- Entrepreneur partners who can join our team.

Technology Transfer Plan

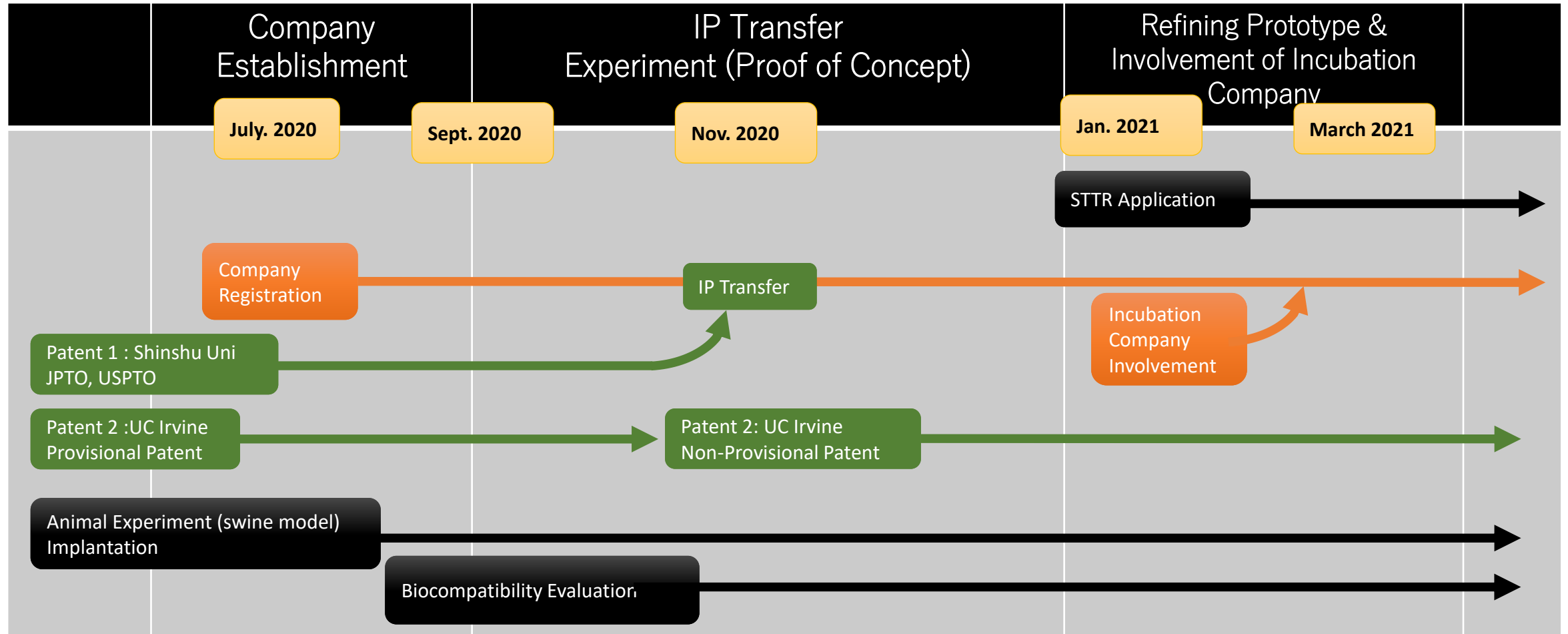
Investment : \$ 5-10 Mil.
Timeline : 7- 10 years



Medical device Corporations (examples)



Development Plan : Timelines (short term)



Summary



- AquaTex Medical, Inc. : Medical Device Company
- Product : Aqua Embolic System (Safer and biocompatible embolic material)
- Estimated Market Size : \$ 50-100 million/year
- Proprietaries: Patent #1 (Shinshu University Japan), Patent #2 (UC Irvine)
- **Seeking for a seed funding** to complete preclinical evaluations.
- Contact: Ichiro Yuki MD, **ichiroyuki@gmail.com**