FACTSHEET

A novel bioactive & coating-free coronary stent shows fast healing while maintaining low re-narrowing in pig study

About Qvanteq AG

Qvanteq AG is a Zurich, Switzerland, based medtech start-up company and was founded in 2009 (spin-off from the Swiss Federal Institute of Technology (ETH); CTI start-up certified). The company focuses on development of novel coronary stents. It is funded by a group of private investors. The company's development projects were/are supported by Swiss Government KTI/CTI grants.

Market is still looking for better stents

The USD 5.4 bn coronary stent market (approx. 3.5 Mio units) is dominated by drug-eluting stents (DES). Approximately 20% of stents are bare metal stents (BMS). Risks after coronary stent implantation, such as in-stent restenosis (re-narrowing, due to neointimal hyperplasia) as well as early and late in-stent thrombosis remain an issue despite recent technological advances in this field. As a consequence patients either need to undergo re-dilatation or treatment with platelet aggregation inhibitors for an extensive period of time, in some cases even lifelong. This bears a number of clinical risks, especially prior or during perioperative activities. Thus, the market is still looking for better products: in essence, clinicians want to have a stent which

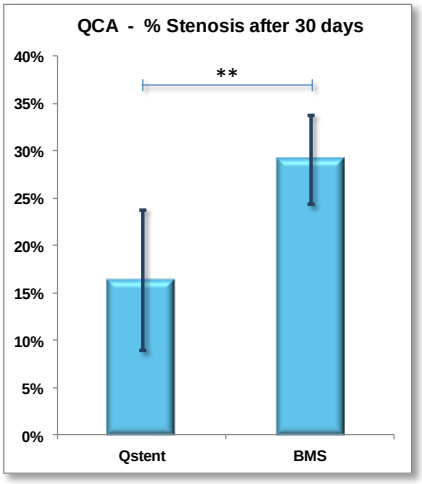
- enables fast in-growth (endothelialization) in order to reduce thrombosis risk
- reduces re-narrowing (neointimal hyper-plasia) in order to avoid re-dilatation
- needs minimal anti-platelet treatment time

The *Qstent* - a bioactive solution

Qvanteq has developed a novel **biologically active** surface technology which can be applied to **any coronary stent** surface. A direct physico-chemical treatment process results in a highly uniform and durable hydrophilic surface without coating and without altering the mechanical properties of the stent. The ***Qstent*** shows favorable endothelialization and thrombogenicity properties. The technology has been applied to the coronary stent platforms from Medtronic, Abbott Vascular and Boston Scientific; essentially with the same in-vivo outcome.

Qstent shows significantly reduced re-narrowing (neointimal hyperplasia)

Proof of Concept animal studies with the ***Qstent*** were conducted in collaboration with CBSET (www.cbset.org). The standard coronary artery swine models at 30 and 90 day time points were used. The ***Qstent*** was assessed and compared to its commercially available and untreated BMS counterpart as well as to the corresponding DES from the same stent platform.



Histomorphometric analysis as well as Quantitative Coronary Angiography (QCA) revealed statistically significant reduction in late lumen loss and neointimal hyperplasia of the ***Qstent*** compared to the untreated BMS and DES after 30 days (see Figure). Similar differences were also observed after 90 days: late lumen loss and percent stenosis were 0.17mm and 5% respectively, for the ***Qstent***. The ***Qstent*** performed favorable in terms of injury, inflammation, fibrin deposition and endothelialization as assessed by

histopathology. Neointimal maturation and endothelialization was complete for the ***Qstent*** at 30 days [1].
Moreover, the ***Qstent*** showed consistent in-vivo results independently of the stent platform used (design and/or alloy). This leads to the conclusion that Qvanteq's novel bioactive surface technology is effective as well as independent of stent design and/or alloy.

Value proposition

Based on the in vivo results, Qvanteq's team of experts proposes the ***Qstent*** as a valuable alternative to DES due to its significantly reduced neointimal hyperplasia compared to BMS. Furthermore, its fast and complete endothelialization promises minimum anti-platelet treatment time (comparable to BMS) and would present a clear advantage over currently used DES.

Intellectual Property (IP)

Final product as well as manufacturing processes are covered by 5 patent applications.

About the team

The company was founded by Arik Zucker (MSc ETH Physics, CEO) and Armin W. Mäder (PhD, MBA, Chairman). Together they have extensive life science industry experience from both larger corporations as well as start-ups, covering device (stent) development as well as market side.

Qvanteq has assembled a strong international (US and EU) scientific network to universities, technical institutions and medical professionals in cardiology.

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[1] Abstract accepted for oral presentation at EuroPCR 2012.