Miniprobes™ for probe-based confocal laser endomicroscopy in bladder, pancreatic or bile duct cancer

TECHNOLOGY

The UroFlex B™, CholangioFlex™ and the AQ-Flex™19 are fibre optic confocal microscopy probes (Miniprobes™) developed by Mauna Kea Technologies and distributed in the UK by SynMed. They are intended for imaging the microstructure of tissues for the assessment or monitoring of cancer of the bladder, bile ducts and pancreas. The Miniprobes™ are designed to be used with Cellvizio®, a small confocal microscope that can be used during endoscopy procedures.

The small size and shape of the Miniprobes™ enable confocal microscopy to be performed in the urinary tract and bladder, bile ducts and pancreas. This technique is also known as probe-based confocal endomicroscopy (pCLE) or an “optical biopsy”. The company suggest that imaging using this system provides immediate information to the clinician which was previously only obtainable by histological or cytological assessment. The information from pCLE imaging is intended for use in diagnostic assessment, guiding treatment (including optimising resection margins) and monitoring treatment response or recurrent disease after treatment.

The Miniprobes™ are compatible with standard endoscopes, cystoscopes and ureteroscopes. The AQ-Flex™19 Miniprobe™ is designed to be used with a 19G endoscopic needle during endoscopic ultrasound-guided fine needle aspiration procedures of the pancreas.

Miniprobes™ for imaging gastrointestinal and respiratory disease are already commercially available in the UK (GastroFlex™ UHD, ColoFlex™ UHD, AlveoFlex™).

The UroFlex B™ Miniprobe™ for imaging the urinary tract was CE marked in November 2012. It is currently available for research use and the company anticipate commercial availability for clinical use towards the end of 2013. This Miniprobe™ has not yet been cleared by the FDA in the USA.

The CholangioFlex™ Miniprobe™ for bile duct imaging was CE marked in March 2008 and is currently available for commercial use. The company expect it to be in use in key specialist centres in the UK by 2014. It has been approved in the USA and Canada but not yet in Australia.
The AQ-Flex™19 Miniprobe™ for imaging the pancreas was CE marked in September 2011. It is expected to be in use in key pancreatic centres to develop a UK registry during 2013. This registry is intended to support a wider commercial launch and the company expect this Miniprobe™ to be in regular clinical use in the UK by 2015. It has been approved for use in the USA and Canada but not yet in Australia.

**POTENTIAL FOR IMPACT**

The company describe the innovative feature of these confocal Miniprobes™ as being the ability to perform minimally invasive confocal microscopy on tissues of the bladder and urinary tract, bile duct and pancreas in vivo. They anticipate that this technology would allow an instantaneous assessment of whether tissues in these areas of the body are malignant or benign, reducing the need for physical biopsies. The company expect that use of this technology would result in quicker and more accurate diagnoses, earlier commencement of treatment, better optimisation of treatment, and quicker and more accurate monitoring of treatment response or recurrent disease than current options provide.

Training would be required for clinicians and pathologists to use this system and interpret the images produced.

**EVIDENCE**

**PUBLISHED PAPERS AND ABSTRACTS**

**Pancreas and Bile Ducts:**


http://springpublishing.metapress.com/content/4343667490726422/


Urine tract and bladder:


**ONGOING STUDIES**


**INFORMATION FROM**

This Alert is based on information from the company and a time-limited internet search.