

NEW PRODUCT APPLICATIONS

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The “Ultra” Ultrasound Platform

Quantel Medical’s ABSolu breaks new barriers.

Quantel Medical’s A/B/S Ultrasound Platform, ABSolu, provides best-in-class images for a better and faster clinical diagnosis, increased patient comfort, and a user-friendly experience, according to the company. The 5-ring annular technology 20 MHz B probe increases the depth of field by 70% and lateral resolution by 27% compared to Quantel Medical’s previous 20 MHz probe, which was a monotransducer, not annular. This provides a high-definition single scan of the vitreous, retinal wall, and orbit.

“Each probe contains an accelerometer, which allows the user to identify the exact location of the image within the globe,” says ABSolu user Peter Antony Good, PhD, BSc, consultant neurophysiologist at the BMI Priory Hospital and Birmingham and Midland Eye Hospital in Birmingham, United Kingdom. Patented motion sensor technology is integrated into all B-mode and ultrabiomicroscopy (UBM) probes, allowing for automatic

and constant detection of the probe position and ultrasound beam direction inside the ocular diagram. “It acts like a GPS for the sonographer,” says Robin Agopian, product manager at Quantel Medical.

ABSolu also features a standardized A mode that complies with all of the hardware and software requirements that are necessary for proper tissue characterization, which is essential for tumor diagnosis, says Agopian. “The standardized mode is based on a specific amplification mode and probe calibration, which are the only valid methods recommended by Professor Karl Ossoinig, who created this technique.”

Furthermore, the device is the first ophthalmic ultrasound platform to feature a DICOM display. “This allows for the screen to be standardized in terms of contrasts, grey levels, and so forth, but also allows for screen calibration,” Agopian says. “Physicians benefit from better image quality on a 21-inch full high-definition monitor, which makes images easier to diagnose.”

“I was prompted to purchase the ABSolu because it contains the latest technological advances in ocular ultrasound equipment,” Dr. Good says. “It is the only fully DICOM ultrasound system available, and it suits my picture archiving and communication system’s connectivity needs and my need for a paperless platform. It’s a fully standardized system containing A scan, 15 MHz, 20 MHz 5-ring annular, and 50 MHz UBM probes.”

Mario de la Torre, MD, ophthalmologist and medical director at the DLT Diagnostic Center and principal professor at the National University of

San Marcos, both in Lima, Peru, who collaborated in the product’s development, says, “As an ophthalmologist specialized in echography and diagnostic imaging, I think it is absolutely indispensable to have the most advanced technology.”

CLINICAL APPLICATIONS

The ABSolu can be used to diagnose and manage a variety of ocular conditions, including abnormalities of the anterior chamber, lens, vitreous, retina, and choroid, as well as the optic nerve, sclera, and orbit. “The 20 MHz 5-ring annular resolution of the vitreous enables the user to differentiate between vitreous pathologies including hemorrhage, inflammatory cells, and endophthalmitis,” Dr. Good says. Furthermore, users can detect vitreo-retinal traction much more easily.

“The ABSolu has improved my management of angle-closure glaucoma, complex cataracts, and trauma cases,” Dr. Good adds.

In addition, ultrasound imaging is the only imaging that provides a visualization of the anatomy behind the iris in case of opaque medias. “This can be done while the patient’s eye is moving, so that physicians can better understand the pathology and make a diagnosis more easily,” Agopian says.

Dr. De la Torre uses the platform for all types of patients, because it allows him to make a precise diagnosis in patients with orbital and ocular pathology and simultaneously image the anterior and intermediate segment with UBM. “Because the platform can perform standardized echography and also obtain very



Quantel Medical’s A/B/S Ultrasound Platform (ABSolu).

IMAGE COURTESY OF QUANTEL MEDICAL.

NEW PRODUCT APPLICATIONS

clear images with B mode, I can diagnose eye and orbit tumors, measure the thickness of the extraocular muscles and optic nerve, and differentiate retinal detachment in complex cases such as endophthalmitis and diabetic retinopathy," he says.

EASE OF USE

The ABSolu platform is based on an all-in-one computer, with intuitive menus and interfaces that allow for quick management of all functions. It takes the user to the tasks they want to perform in an orderly manner. "A wireless pedal is much more comfortable to use than current wireframes and allows my hands to be free to perform other functions," Dr. De la Torre says. "It's compact and mobile enough to take to the operating room and perform tests under anesthesia or guided punctures by ultrasound."

By giving the position of the probe in space, it helps inexperienced users define the examination area and trained users to expedite the flow of exams without having to remember the area where the image was recorded, Dr. De la Torre adds.

Many of the platform's tools help physicians take measurements within the eye, such as calipers, surfaces, and angles, Agopian says. Once an exam is finished, physicians can create complex reports that will help them document their examination easily and accurately. A dual mode offers the possibility to compare 2 scans of the same patient, taken at different dates.

PATIENT BENEFITS

Patients benefit because examinations are less invasive. "All B probes can be used through the eyelid without applying any pressure to the eye," Agopian says. "Even under those conditions, the 15 MHz and especially the 20 MHz 5-ring annular offer exceptional image quality with a very large depth of field."

"This makes it easier to examine young children; they don't have to be sedated," Dr. De la Torre says. Small lesions and any kind of pathology are more clearly visible, Agopian says, so physicians can confirm a diagnosis faster and better, and therefore define the best treatment.

FINAL THOUGHTS

Dr. De la Torre believes that we live in the "century of images," and that ocular and orbital ultrasound, as well as UBM, will continue to be developing methods that are effective in diagnosis, useful for improving workflow, and accessible to anyone in daily consultation. "Ultrasound is no longer a specialist task, it is something that the general ophthalmologist can perform with better capabilities and advanced technologies such as ABSolu," he says. "It allows greater access to these diagnostic methods with an excellent cost-benefit ratio, too." **RP**

CLINICAL TRIAL DOWNLOAD

continued from page 18

patients, which represented 2 subjects: 1 with iritis and 1 with uveitis. I'd like to know more about these patients, and I'd like to see a detailed look at the other 9 subjects with "mild to moderate" inflammation, how they were managed, and how visually significant these events were. Thankfully, Allergan reported that there were no cases of vasculitis as there were in SEQUOIA and CEDAR, but was widefield fluorescein angiography regularly performed to detect vasculitis in the most sensitive manner? MAPLE was also a smaller study with a presumably improved formulation of abicipar, so chances are, it was underpowered to provide a comprehensive understanding of the inflammatory issue — although we know it's a safer formulation. Also note that there was no comparative arm.

I believe that if abicipar is approved, it will potentially become a second-line treatment for eyes with unresponsive or recurring activity and for retina specialists who feel comfortable with the small risk for IOI. My hope is that more detailed information will be provided in the upcoming months to better prepare us, and that Allergan will continue to improve the extraction process to further decrease the risk of this complication. I also hope that more granular studies will elucidate this complication in more detail.

Yehia Hashad, MD

Senior Vice President, Head of Global Clinical Development, Allergan

In April, Allergan and Molecular Partners announced topline safety results from the MAPLE study. In this single-arm study, treatment naïve or prior anti-VEGF treated patients received 3 monthly 2 mg abicipar injections followed by 2 mg injections every 8 weeks for up to a total of 5 injections through week 28. In our commitment to continuous improvement of abicipar, we have advanced our analytical methods and manufacturing processes. As a result, the 8.9% incidence of IOI in the MAPLE study was lower than the rate observed in prior phase 3 studies.

As demonstrated in our prior studies, CEDAR and SEQUOIA, abicipar is the first anti-VEGF to successfully maintain initial vision gains with a 12-week fixed treatment regimen in all patients compared to monthly ranibizumab. The safety profile results of MAPLE give us confidence to proceed with scale up manufacturing activities, and this scaled up product will be used in the upcoming larger study — Phase 3 DME — as we seek additional indications. **RP**