

Better life for incontinence patients

In a healthy person, the urge to relieve the bladder manifests itself in a timely manner, letting the brain know that it's time to visit the facilities after a lengthy movie, for example. However, millions of patients who suffer from urinary incontinence have lost that impulse, which seriously affects their quality of life and makes their hospital stays more complicated. Liliium Otsuka, a leading provider of healthcare devices and services, has made a breakthrough in this field. Mr. Isao Shirasaki, President and Representative Director of Otsuka, says the company has introduced a revolutionary technology to constantly monitor urine volume in patients with the use of ultrasound, replacing more invasive and painful techniques.

Founded in January 2015, Liliium Otsuka is a subsidiary of Otsuka Medical Devices Co., Ltd., created through a partnership with UriCare Inc. The aim established for the new company since the time of its foundation was to develop incontinence-related products to help aid the growing need for more advanced technologies in this medical space.

From the moment of its creation, the company signed an agreement with Japan's prestigious National Institute of Advanced Industrial Science and Technology (AIST) that would entail the joint research, development and marketing of products that employ UriCare and AIST's ultrasound technology applied to the incontinence field.

According to Mr. Shirasaki, the process of founding Liliium Otsuka started as early as 2012, after one of the parent company's executives heard of the advancements in ultrasound sensor technology. After an

initial evaluation, UriCare became a partner in the development of the company by 2014, and later moved on to the joint establishment of the organisation as it is known today.

As for Otsuka Medical Devices Co., it was founded in 2011 as an overseer of the medical devices business for Otsuka Holdings Co., Ltd, which had been previously established in 1964 as Otsuka Pharmaceutical Co. The origin of the business was in the development of advanced intravenous solutions. Since 1980, the company started launching an array of original pharmaceutical products. By 2004, they had grown to be market leaders with the release of Aripiprazole, a drug used in the treatment of schizophrenia and bipolar disorder. This development was highly successful and gave way to more advancements in the medical field due to a highly active research and development effort.

This company's ground-breaking line of products sell mostly in Japan and the United States, their most important markets, but the Indian market has also been tapped thanks to a business expansion through a joint venture called Claris Otsuka founded in 2013. No strangers to the Asian market, the company pioneered by starting the first Chinese-Japanese joint company, also with the involvement of the Chinese government, for the production of intravenous products.

Numbers underscore Otsuka's leadership position. Recently disclosed figures put their worldwide consolidated turnover at USD 14.5 billion in 2014. With more than 170 companies under its umbrella and over 44,000 employees, the focus of this conglomerate has not shifted from introducing cutting-edge technology in every space.

It was this inherited strive for scientific advancement which led to the development of the Liliium α -200 continuous urine volume sensor, which aids healthcare professionals, patients and caretakers in the management of urination difficulties by giving a pain-free assessment of the amount of urine stored in the bladder. This tool will remove the need for indwelling "Foley" catheters that are known for their painful applications and their restrictions on normal lifestyles.

Using a pocket-sized, light-weight mobile device, the patient or physician can be readily alerted by sound or vibration when the measurement of urine reaches a pre-established target volume. The LCD display shows the volume of the output in figures and graphs, keeping record of the volume, time, frequency, post-void residue and level of urge. Accessories like wearable clips, an attachable printer and carry bags are included with the Liliium

Liliium[®] α -200
A continuous urine volume sensor





Human resource
centre in Tokushima

α-200.

The way the equipment works is by way of a small attachable probe, which is placed on the area of the abdomen which corresponds to the bladder. This discrete and detachable extension of the device uses ultrasound technology to estimate the volume of urine collected in the bladder, based on the distance between the anterior and posterior bladder walls. The data is then processed and continually reflected on the screen.

As Mr. Shirasaki notes, the technology was developed in Japan based on intellectual property built up through a joint project between industry and the government, and with the participation

of AIST. The project was aimed at advancing the quality of medical care for incontinence patients, which in turn should help increase their quality of life.

“We will continue to technically refine and improve this innovative medical device intended for the world as well as for Japan.”

In a company press release, Dr. Osamu Yokoyama –president of The Japanese Continence Society and professor at the University of Fukui- praised the new equipment for its potential to improve the quality of the care being provided to those who suffer from incontinence. “For patients with loss of urge or urinary difficulty, the beauty of this product lies in

its ability to accurately monitor the size of the bladder, and the ability to schedule bathroom trips or self-catheterisation.”

Dr. Yokoyama noted that the Japanese Continence Society will initiate a certified physician system next year that will begin to train doctors who can professionally manage continence care, and that the device is thought to provide a good method to support a more efficient discharge of patients to their homes.

On that note, Mr. Shirasaki highlights the importance of this advancement for the improvement of care, especially in countries like Japan. “We have become a super-aging society which needs to address social challenges such as the



Main R&D building
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Motto Company

extension of healthy life expectancy. Issues with urination control are known to affect patients who return home from the hospital and impose a heavy burden on nursing and caregiving services. We believe that the development and sale of innovative medical devices in this area will contribute to the well-being of many patients, as well as nurses, physicians and all members of the health care process.” Mr. Shirasaki has a long history at Otsuka. He joined the company in 1990 as a sales representative. A decade later, he moved to the research and development division of the inhalation technology project, which made it possible to send large-molecule drugs to be absorbed by the

body through the lungs. As the company prepared to be publicly traded in the Tokyo Stock Exchange, Mr. Shirasaki was transferred to Otsuka Holdings Co., Ltd., where he was in charge of the evaluation of new medical technologies and equipment, and helped organise the transition towards one group. He is currently also a director at Otsuka Medical Devices.

As for the future of the company, it is the aspiration of the organisation to break into the European Union market and introduce their leading technological advancements to the health care sector in that region, which similar to Japan struggles with increasing healthcare costs

as a direct result of an ageing population. To that end, Otsuka will need to obtain the CE mark for the Liliium α-200 urine volume sensor.



Lilium Otsuka Co., Ltd.

Lilium Otsuka Co., Ltd.

4-12-6, Chiyoda

Chuo-ku, Sagami City,

Kanagawa

Japan

Website:

www.lilium.otsuka/indexen.html



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