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[MedTech, we are the national university] (4) Lowering the burden of caregiving, protecting hygiene and dignity... Robot that helps patients defecate

Curaco develops excretory care robot care bidet for the first time in 17 years Collecting patient feces that was done by humans, robots are in charge of "Domestic market size, 1 trillion won even if conservatively estimated"

Reporter Lee Jong-hyun | Entered: 2024.05.28. 15:51 | Update 2024.06.12. 09:56

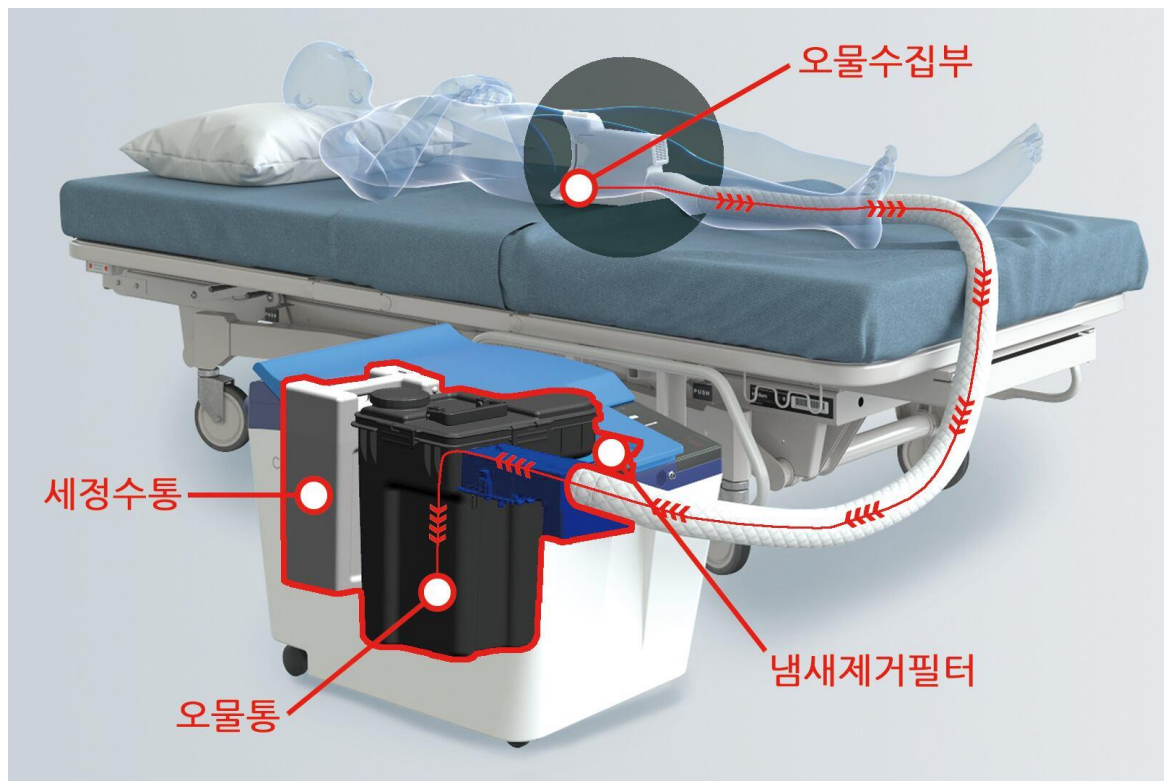


Curaco CEO Lee Hoon-sang (right) and Curaco employees pose in front of the excretion care robot 'Care Bidet'. /Chosun Biz

It is not easy to take care of elderly patients with limited mobility. As society ages, the demand for care is increasing, but it is difficult to find caregivers, so families often bear the burden. One of the most difficult things is to take the feces of a bedridden patient and change a diaper. If it is not treated in time, skin diseases will occur on the patient's body and pressure ulcers cannot be avoided.

What if there was a robot that handled the feces of elderly people with limited mobility or disabled patients who need to stay bedridden? My imagination became a reality. Carebidet, made by Curaco, a Korean medical device company, is a robot that does such a job. Curaco, which was founded in 2007, only makes excretory care robot care bidets. It took 17 years to develop the product, and last year, the product was officially launched and entered not only Korea but also the United States and Japan.

Curaco was recognized for its technology and was selected as one of the top 10 major projects in 2024 for the cross-ministry life-cycle medical device R&D project. At the end of last year, it was also selected as the first investment company in the social service investment fund created by the Ministry of Health and Welfare with a value of 14.5 billion won. Curaco CEO Hoon-sang Lee explained that being selected for the cross-ministry full-cycle medical device R&D project has recognized Curaco's technology and increased business opportunities. He said, "There was a similar product in Japan, but it was difficult to use it due to poor performance, and now the Care Bidet we made is practically the only product in the world."



The structure of the care bidet made by Curaco. The Care Bidet is a medical device that automatically disposes of feces when the patient is wearing it. It is attracting attention as a technology that can greatly reduce the burden on caregivers. /Curaco

More beneficial to patient health than diaper use

Bedridden patients who are always in bed use diapers. Patients who have difficulty covering their urine have to change diapers frequently, and since the patient is a large adult, it often takes two caregivers to change diapers for one person. The patient feels a lot of shame while changing diapers. The price of adult diapers, which cost about 1,000 won per piece, is also a considerable burden. Even if you use only 6 diapers a day, the cost of diapers alone is 2.16 million won a year. Care bidets eliminate this inconvenience and burden.

Care bidets are largely divided into body wear and body. The body wearing part is attached from the buttocks of the bedridden patient to collect feces and send it to the sewage collection container of the main body. When the patient urinates, the sensor detects and sucks it up, and the bidet function activates to wipe the patient's buttocks with water and dry them. The feces collected in the sewage collection container only need to be disposed of once or twice a day by the caregiver. There is no need for the family to lose sleep by changing the patient's diaper frequently at night, and there is no need for the caregiver to wipe the patient's feces by hand while changing the diaper.

CEO Lee Hoon-sang said, "From the patient's point of view, it is a technology that can solve the bowel movement without the help of others, so there is no shame, and it is a technology that can relieve stress for the family members who are taking care of them." The family of a female patient in her 20s who is using a prototype care bidet in Japan said, "The hardest thing for me since my daughter became paralyzed in a car accident when she was in high school was to dispose of feces at night."

Care bides have been shown to have a more positive effect on patients' health than changing diapers every time. According to a paper published in the 'Journal of Digital Convergence Research' in 2021 by researchers at CHA Medical University, the use of a care bidet reduces the risk of incontinence-related dermatitis and pressure ulcers in patients in the intensive care unit.

Curaco said that as we enter an aging society, care robots will become a necessity. By next year, South Korea will enter a super-aging society in which the proportion of people aged 65 and over will exceed 20%. On the other hand, the supply of caregivers continues to decrease. According to the Bank of Korea's report on "Measures to Ease Labor Shortage and Cost Burden for Care Services" released in March, the labor shortage for care service workers is expected to increase from 190,000 in 2022 to 610,000~1.55 million in 2042.

Alternatives such as the introduction of foreign caregivers or caregivers are emerging, but it is also true that there is a great deal of anxiety about caregivers from foreign countries whose culture and environment is different from ours. Curaco predicted that the demand for excretory care robots such as care bidets that automatically manage patients' feces will increase in this situation.



Curaco participated in the 'World IT Show', the largest ICT comprehensive exhibition in Korea, held in April and introduced the Care Bidet. /Curaco

"The goal is to create a nursing hospital specializing in care robots"

Curaco conservatively estimates that the size of the domestic market is 1 trillion won. Among all long-term care patients, there are 135,960 severe grade 1~2 patients in Korea as of June 2021. This figure excludes bedridden patients and the elderly population who are not registered as long-term care patients.

Japan, which is aging faster than Korea, has a larger market. Among the long-term care insurance recipients who are long-term care patients, there are 1.44 million patients in Japan who are severely ill with level 4~5. It is 10 times that of South Korea. CEO Lee Hoon-sang said, "The market size reaches 100 trillion won when expanding globally, and as the recent nursing trend changes from human care to automated robot care, I expect more and more people will visit Curaco."

Curaco CEO Hoon-sang Lee said that his experience of taking care of his father, who had been bedridden for five years, led to the development of the Care Bidet. He said, "My father was a well-known man, but after he collapsed from a cerebral infarction, there was nothing he could do from the next day," adding, "I was shocked that he didn't take care of my father properly even though he used a caregiver, and that led to the development of a care bidet."

CEO Lee also talked about his experience of visiting several nursing hospitals in Korea and abroad in the process of developing a care bidet. He said, "There were many nursing hospitals where the environment was poor and unhygienic," and "There were places where one caregiver took care of 30 patients each, but in fact, they were neglecting the patients."

CEO Lee said that if Curaco's care bidet relieves the burden on caregivers, it can reduce the number of patients being taken away in nursing hospitals. He said, "My goal is to create a nursing hospital that I feel like going to in the future," and "I want to create a nursing home specializing in care robots using care bidets."



Curaco CEO Lee Hoon-sang had an interview with Chosun Biz on May 22 at the Healthcare Innovation Park in Bundang, Gyeonggi-do, and said, "My goal is to create a nursing hospital that I want to go to in the future." /Chosun Biz

Health information with feces medical information

Curaco launched its official product last year and exported its products to the United States and Japan this year. In Korea, it is also expanding its business by launching a demonstration project to supply care bidets to nursing homes for the elderly in southern Seoul.

CEO Lee said that he wants to create a 'life log platform' using Carebidet as his next goal. It is a technology that collects medical information from the patient's feces to identify the health status in real time. CEO Lee said that there are many digital healthcare services, but most of them only deal with basic data such as calorie consumption, step count, heart rate, and sleep time, and rarely have 'killer content'. He said, "Human feces are important data to know health status, so we will create a platform that provides customized services based on this."

The excretory care robot can be used outside the earth. CEO Lee explained that the idea of applying Carebidet technology to astronauts came up at a recent technology exchange meeting held in the United States. For deep space exploration like Mars, there must be a device that can dispose of feces in the spacesuit, but Lee explained that he has not found a suitable solution at the moment. CEO Lee said, "We are planning to increase the scale of our business this year and hold an initial public offering (IPO) in 2025."