

CKDu: Breakthroughs, setbacks and a spiritual touch

By Sasha Chavkin and Anna Barry-Jester, the Centre for Public Integrity

The Sunday Times publishes today the second in a series of articles by the Washington-based Centre for Public Integrity on mystery kidney ailments afflicting Sri Lanka's farmer community in North Central Province and adjoining provinces. The first article was carried last week

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KEBITHIGOLLEWA, Sri Lanka – For two decades, chronic kidney disease has been a mystery and death sentence in Sri Lanka, striking 15 percent of the residents of its north central region. ♦ This summer, after years of secretive official research, a glimmer of scientific hope emerged. The government and World Health Organization announced in June that they identified a key cause of the disease in Sri Lanka: chronic exposure to arsenic and cadmium, likely consumed in food.

Yet in a disease that has confounded experts across continents, even potential breakthroughs come with asterisks. The new report left huge questions unanswered – including the extent fertilizers and pesticides contributed to the outbreak. In Sri Lanka's lush northern farmlands, the mystery and the death sentences continue. Lacking firm answers from the scientific community, some victims' best hope for survival comes through the spiritual community – and offers of kidneys for transplants from Buddhist monks and from those they inspire to make extraordinary sacrifices to strangers.



Sampath Kumarasinghe talks to Ajantha, a potential kidney donor, while undergoing dialysis treatment at Anuradhapura General Hospital, Sri Lanka. Pic by Anna Barry-Jester for the Centre for Public Integrity

At 21, Sampath Kumarasinghe is among the victims awaiting that miracle. The soft-spoken farmer was diagnosed last September with kidney damage so severe it had reached its terminal phase: end stage renal disease. Healthy his entire life, he suddenly became feverish and too sick to work in the rice paddies. His mother mortgaged their land to pay for his medical care, and they began the search for a kidney donor. One day, like a vision, a man appeared in his hospital offering to donate his kidney.

"I am only thinking of ways to save my son's life," said Sampath's mother, Punchirilalage Dingiri Manike.

Sampath is among the youngest victims of an epidemic of chronic kidney disease sweeping north central Sri Lanka. Its victims are mostly male agricultural workers who

do not suffer from diabetes or hypertension, the usual causes of the illness. The government and WHO call it CKDu: chronic kidney disease of unknown etiology.

Winding path to answers

CKDu emerged in Sri Lanka's north central farmlands, known as the "rice bowl," in the 1990s. Physicians began noticing clusters of kidney failure in which four or five members of a single household had the disease. Rezvi Sheriff, who began practising in the 1970s as Sri Lanka's first nephrologist and is the unofficial dean of the country's kidney doctors, calls it a recent phenomenon.

"In the last 20 years or so," Sheriff said, "we have noticed it." Researchers developed a succession of theories to try to explain the outbreak, from cyanobacteria to fluoride to aluminum pots and pans, but none settled the debate. ♦ In 2008, Sri Lanka's Health Ministry invited the World Health Organization to join a comprehensive study to unravel the disease's roots.

For more than three years, no results were announced publicly. "Releasing information piecemeal is not the solution for the problem," said Dr. Shanthi Mendis, Coordinator and Senior Adviser of the WHO non-communicable disease program and the lead adviser of its efforts in Sri Lanka.

Scientific alarms sounded elsewhere. A group of researchers from Sri Lanka's University of Kelaniya released studies citing widespread arsenic contamination in drinking water, food and soil – and blaming pesticides.

Members of the government and agribusiness industry fiercely criticized the group's findings. "Loose tongues and irresponsible reporting could lead to irrevocable repercussions in the export sector and thereby adversely affect the whole economy of Sri Lanka," Dr. Anura Wijesekara, Sri Lanka's registrar of pesticides, wrote in a column in *The Island* newspaper.

In June 2011, several common pesticides were found by the government to have small amounts of arsenic, and briefly banned them from importation.

Two months later, Wijesekara lifted the ban on the pesticide imports. He did so, he said in an interview, because the amount of arsenic they contained was too small to pose danger. "It's not a big deal to have so little amount of arsenic in a pesticide because arsenic is a natural element," Wijesekara said.

Yet in the months before the ban was lifted, the official CKDu study group was internally warning of the "imperative" of stronger regulations for "nephrotoxic agrochemicals." A WHO meeting report from June 2011, obtained by The Center for Public Integrity, cautioned that failure to act quickly could "result in cumulative damage to the health of the people living in those areas."

A full year later, in June 2012, the government and WHO released partial findings, concluding that exposure to low concentrations of cadmium and arsenic is a key cause of the epidemic. ♦ "The data that we have got up until now show that it's a combination of nephrotoxic heavy metals," said Mendis of the WHO. "For the moment all we know is that these heavy metals have entered the food chain."



Mihintale Dhammarakkita Thera (center), a monk in one of the regions of Sri Lanka most affected by CKD, donated his kidney to a CKD-afflicted high school principal. Pic by Anna Barry-Jester for the Centre for Public Integrity

Still, much remains unknown. The government and WHO said that lab results found small amounts of heavy metals in CKDu patients' blood and urine, but did not specify how much. Researchers said the metals got there through the food chain – and not through the widely suspected vector of drinking water – but will not say which foods were contaminated. Mendis said a technical report to be released in late October will lay out the details.

Agenta ◆kesson, a toxicologist at the Karolinska Institute who specializes in cadmium poisoning, reviewed three WHO meeting reports describing Sri Lanka's findings through February 2012. These notes, obtained by The Center for Public Integrity and described as "administrative" by the WHO, include the results of many of the biological and environmental tests.

"Based on what's written here, you cannot conclude anything," ◆kesson said. In the absence of any newer evidence, she said, the exposure levels described were "not enough to cause chronic kidney failure."

The results also offered no explanation of how the heavy metals entered the food. A leading suspect is agrochemicals, which are heavily used in the affected area's rice paddies. The official study's research of pesticides and fertilizers remains incomplete. To some, the government and WHO's reticence to release more information raises the possibility that the undisclosed evidence points toward the agrochemicals and rice crops that form the economic backbone of Sri Lanka's long-suffering northern countryside.

Channa Jayasumana, one of the Kelaniya scientists, said that in a private meeting with his group in August the health ministry had acknowledged the role of fertilizers and pesticides. "They have narrowed down the problem to heavy metals and realized the importance of fertilizers and pesticides," Jayasumana said.

The agribusiness industry says dangerous levels of heavy metals could not have come from their products.

The cause could be "cadmium or arsenic," said Rohitha Nanayakkara, Secretary of the National Agribusiness Council. "But what we say is it can't be from pesticides, because

the quantities included in pesticides are minimal.”

Meantime, the government continues to import – and farmers continue to apply – thousands of tons of agrochemicals to the fertile paddies blanketing the farmlands of Sri Lanka.

Kidneys for strangers

As officials debate their next steps, another movement is bringing hope to Sampath and others suffering from CKDu.

As Sampath was falling ill, a man in a distant village, W.B. Ajantha, made an unusual vow. When his wife became pregnant, Ajantha promised to Buddha that he would donate his kidney to one of the many young men who needed one. After his daughter was born, he went to the hospital to find a patient.

One day as Sampath lay in the dialysis ward, the stranger approached and offered to donate his kidney. Ajantha is one of hundreds of Buddhists, most of them monks, donating their kidneys to strangers due to their spiritual beliefs.

In Sri Lanka’s devout North Central province, where CKDu has become the leading cause of death, these orange and red-robed priests are revered by the population and supported by its alms. A nephrologist at a hospital in central Sri Lanka estimated that about one of the three transplants his unit performs each week relies on an altruistic donor.

“He said he is not doing it for money,” Sampath’s mother, Manike, said of Ajantha, who is Buddhist but not a monk. “I can only bless him as I have nothing to give.”

Sampath’s transplant will be one of the first performed at Anuradhapura General Hospital, expanding a growing program to provide patients with the only real solution to advanced CKD: kidney transplants.

Mehinthe Dhammarakkita Thera gave his kidney when he was 28. As a boy, he had seen his ailing uncle receive a kidney transplant, and then go on to survive for more than 20 years. The monk was moved to donate his own kidney after visiting a village where he met sick patients who would die without a transplant.

“I thought about the impermanence of life and how our bodies will anyway be absorbed to the soil one day,” Dhammarakkita said. “If one can make a sacrifice when we are alive, one can gain some spiritual happiness.”

Dhammarakkita Thera provided the unseen link in Sampath’s apparent miracle – informing Ajantha of his plight.

As he awaits his operation, Sampath continues to make the 8-hour journey to and from Anuradhapura Hospital twice a week. On a warm day in July, nurses insert needles into his neck for his four-hour dialysis session.

“I am happy,” he said, “but I do have some fear as well.”

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