

# Taking the fight to a silent scourge in Soweto

Pregnant women and new mothers at high risk from potentially fatal heart disease, writes Sheena Adams

The rate of heart failure in Soweto is more than three times that of the Western world's and doctors in the township are particularly concerned about a fatal genetic heart condition that inexplicably affects only African women.

Head of the Soweto Cardiovascular Research Unit at Chris-Hani Baragwanath Hospital, Dr Karen Sliwa-Hahnle, recently published research findings on the disease, called peripartum cardiomyopathy, and is initiating a programme in the township that aims to make people more aware of their hearts.

Some of her research findings on the disorder have been published in the medical journal *Lancet* and in the bi-weekly medical journal *Cell*.

The disorder is common in South Africa among African women who are either pregnant or recently gave birth.

The estimated incidence is one case per 1 000 live births in South Africa, although the condition is more common in Haiti where prevalence is one case per 250 live births.

"It normally affects mothers between one to five months after giving birth," Sliwa-Hahnle says.

"The symptoms are heart failure, swollen legs, shortness of breath and water on the lungs. Even with treatment, 25% of women die."

The doctor has had a hard time identifying patients at the hospital because casualty nurses often prescribe water tablets to heart failure patients, misdiagnosing symptoms.

But Sliwa-Hahnle is keen to turn around this misdiagnosis when she launches a project in October, which she hopes will alter the diets, size and ultimately the lives of Sowetans.

Of the 4 506 patients treated by Bara's cardiac unit last year, an unexpected 52% experienced some form of heart failure.

This "very high figure" is 37% more than the estimated 15% of the population with heart failure in Western countries.

Twenty-two-year-old Kundsai Shabangu is one patient who stumbled into the unit, struggling to breathe and unable to lay down without having a coughing fit.

She gave birth to a healthy child six months ago but three months later developed symptoms indicative of peripartum cardiomyopathy.

Her heart - bright white against the screen of a portable scanning machine - was massively swollen. Abnormal pumping, clearly visible as the heart contracted crookedly, meant blood was flowing back into the heart instead of being pumped to the rest of the body.

## POST-PREGNANCY DISORDER

Peripartum cardiomyopathy (weak heart) is a disease characterised by heart failure in 1 in 1000 live births. It affects black South African women (genetically related) with no history of heart disease, in later stages of pregnancy, up to several months after giving birth. Ongoing studies at the Soweto Cardiovascular Research Unit have shown that the onset of the disease may be linked to breastfeeding as this process opens an abnormal pathway to the heart.

### LUNGS BECOME FLOODED

- In this case heart failure results in the lungs becoming flooded with fluid; patients cannot lie down or exert themselves without coughing.
- Heart becomes enlarged and flabby, incapable of pumping blood through the body properly.

**Normal heart**

Pumps simultaneously on both sides

**Weak heart**

Pumps alternately on either side

### TREATMENT

**PHASE 1:** Six months of treatment with various drugs to try to correct the irregular pumping action.

**PHASE 2:** If medication fails, surgeons implant a computerised pacemaker to aid the heart in pumping blood.

1. Under local anaesthetic, an incision is made where the pacemaker is placed just under the skin and three leads are fed through the subclavian vein and down the superior vena cava.
2. One is attached to the right atrium.
3. The second to the right ventricle
4. The third is attached to the left ventricle.

All surfaces of each section are tested for optimum efficiency.

- Procedure lasts 3-8 hours.

Source: Dr Karen Sliwa-Hahnle, Soweto Cardiovascular Research Unit

Graphic: Nina Clark

"Her heart is functioning at only 22%. Normally it is 55%," Sliwa-Hahnle says.

About 23% of affected women will respond positively to oral medication. But if women with this condition have a second child, they risk a 50% chance of dying. Survivors may suffer long-term after-effects and may need an eventual

heart transplant.

It is not clear what causes the condition, although Sliwa-Hahnle says it is connected to a certain abnormal pathway in the heart and linked to breastfeeding.

She notes that women of a certain genetic background were predisposed to the disorder. However, the condition only presented itself

when those women started breastfeeding, and affected women were often given a drug that stopped lactation.

Bara's cardiology unit is 30 years old and the largest teaching unit of its kind in Africa, according to Sliwa-Hahnle, an associate professor of medicine and cardiology. The Soweto Cardiovascular

Research Unit is attached to and funded by Wits University and businesses which include pharmaceutical company Bayer and pacemaker manufacturer Medtronic.

An ongoing Heart of Soweto Study, started last year, is one of the more exciting projects initiated by Sliwa-Hahnle.

The research unit decided to use the thousands of Sowetans who attend the clinic every year for groundbreaking research that tries to gauge the spectrum of heart diseases suffered in the township.

According to Sliwa-Hahnle, tuberculosis not treated timely and HIV/Aids contributed to the high statistics found at the clinic.

About 120 of her patients were heart attack patients last year. This is considerably higher than the annual average of 10 heart attacks a year reported at Bara between 1980 and 1985, for example.

What concerns the doctor most, however, are the high levels of pollution in the city.

Pollution, mostly from coal fires, causes chronic airway inflammation and impedes the heart's pumping function.

"In India, women are particular prone to this because it is them who do all the cooking," says Sliwa-Hahnle.

"This is exactly the case in South Africa, especially in townships and places like Delemas, where no humans should live and where cooking fires are indoors.

Half the heart attack patients at the clinic were women and, overall, 60% were younger than 50.

"This, again, is very different to the West where 80% of heart attack patients are older than 60. So here we are dealing with very young people," she says.

The Heart of Soweto Study, which the Medtronic Foundation is funding for three years, consists of a broad heart management programme and nurses at the Pimville and Diepkloof clinics will be educated by Sliwa-Hahnle's unit on how to identify heart patients early.

A cookbook and a diet book are also being developed for those prone to heart disease.

"We have had a lot of fun in the kitchen with that, trying to work out recipes for good, healthy food that is affordable," says Sliwa-Hahnle.

"We have a Heart Awareness Day on the first Friday of every month when we set up at the Bara taxi rank and test people's blood pressure and so on.

"What we are finding is that there is basically no one healthy left in Soweto - 50% are overweight, which can lead to hypertension and strokes in both young and old."