

## New hope against rotavirus associated diarrhoea

DR ASHOKE K ROY

An estimated one-third of all diarrheal deaths in children under five years old are due to Rotavirus. Each year nearly 500,000 children die from diarrhoeal disease caused by rotavirus, and another 2 million are hospitalised. Most deaths occur in developing countries like ours where access to treatment is limited.

### Populations at risk

Nearly every child becomes exposed to rotavirus before reaching the age five. Although most cases are mild, some are severe, and even lead to fatality.

Children of six months to two years of age are most vulnerable, along with premature infants, the elderly, and those with weak immunity.

### Bangladesh perspective

According to a study, it is estimated that between 14,850 and 27,000 of the 3 million Bangladeshi children die of rotavirus every year by the age of 5 years, equivalent to 1 rotavirus death per 111 to 203 children. The estimated burden of rotavirus diarrhoea in Bangladesh is

sufficiently great for inclusion of the vaccine in the immunisation programme either in government programme (preferred) or allow in private market (at least affordable group of population can save their children and prevent spread a significant extent).

### Natural history of the disease

Rotavirus can be mild or severe. Its incubation period is about two days. The disease causes vomiting and watery diarrhoea for 3 to 8 days, and frequently includes fever and abdominal pain.

Infection appears to provide partial immunity, as repeat infections tend to be less severe. This disease pattern makes researchers believe that a vaccine could protect against the severe disease and death caused by rotavirus.

### Transmission

Huge amount of virus spread readily inside the body of an infected person. The virus is mainly transmitted through contaminated hands. Rotavirus, a hearty virus that survives easily in the environment, can also be transmitted through contaminated objects, water, or food.



A rotavirus infected diarrhoea patient with severe dehydration (Left). Most common source of rotavirus infection (Right).



However, scientists suspect that rotavirus may be transmitted through the air as well, since the virus has been detected in respiratory tract secretions of infected children.

A universal childhood vaccine may be the best means to prevent rotavirus disease.

### Management

Neither antibiotics nor other drugs can cure rotavirus. The only treatment is maintaining the fluid and electrolyte balance i.e. rehydration. In most serious cases, frequent vomiting makes oral rehydration ineffective. Children who cannot keep down

fluids urgently need intravenous fluids.

The illness is usually mild enough that parents can manage their children at home while some cases may require hospitalisation.

### Why children face higher risk

Although humans of all ages are susceptible to rotavirus infection, children 3 to 24 months of age account for the vast majority of severe infections. Why does rotavirus hit this age range so hard? It is believed that maternal antibodies protect younger infants, and older children may

have built up immunity from repeated earlier infections.

Premature infants, the elderly, and the immunocompromised are also more prone to severe symptoms. Many factors contribute to children in poor countries carrying this disproportionate burden, including increased malnutrition and limited access to advanced therapy like fluid replacement.

### Cause of clinical disease

Rotavirus replicates in certain cells that line the inside of the small intestine. This replication decreases the ability of the intestine to absorb salts and water.

Rotavirus has never been detected consistently in the blood or in other sites far from the intestine.

### New hope for the patients

GlaxoSmithKline (GSK) recently announced the launch of the vaccine against rotavirus, Rotarix™ in Mexico representing the first concrete step in providing a safe and effective vaccine to prevent rotavirus globally and filed for registration in many countries including Bangladesh.

The Phase III clinical study over 60,000 infants aged 6 weeks to 6 months, conducted in 11 Latin American countries and in Finland confirmed that Rotarix™ is safe and well tolerated. Rotarix™ has demonstrated up to 90 per cent efficacy against severe rotavirus-related gastroenteritis (inflammation of the membrane lining the intestines and the stomach, caused by a viral infection and resulting in diarrhoea and vomiting) in the first year of life. Rotarix™ has also demonstrated protection against circulating strains that were different from the vaccine strain.

Two oral doses of Rotarix™ are to be given before 6 months of age within country's existing infant vaccination schedule.

## Scientists clone human stem cells from patients



Seoul National University professor Woo Suk-Hwang (C) is surrounded by journalists on his arrival at Incheon airport, west of Seoul. South Korean scientists said that they have used the same technology to create batches of embryonic stem cells from nine patients.

South Korean scientists who cloned the first human embryo to use for research said that they have used the same technology to create batches of embryonic stem cells from nine patients.

Their study fulfills one of the basic promises of using cloning technology in stem cell research -- that a piece of skin could be taken from a patient and used to grow the stem cells.

Researchers believe the cells could one day be trained to provide tailored tissue and organ transplants to cure juvenile diabetes, Parkinson's disease and even to repair severed spinal cords. Unlike so-called adult stem cells, embryonic stem cells have the potential from the beginning to form any cell or tissue in the body.

Woo Suk Hwang and colleagues at Seoul National University reported that their process was much more efficient than they hoped, and yielded 11 stem cell batches, called lines, from six adults and three children with spinal cord injuries, juvenile diabetes and a rare immune disorder. They also expressed that the study showed that embryonic stem cells could be derived using nuclear transfer from patients with illness ... regardless of sex or age.

While the patients whose cells were copied do not stand at this time to benefit, the researchers hope to

study the cells to understand their conditions better. They also said that their method might be less controversial than other work with embryonic stem cells because, by their definition, a human embryo was never actually created.

### No human embryo

Hwang said his method differs from that first used to derive human embryonic stem cells in 1998 and he proposes using a new term for the cloned embryos -- a "nuclear transfer construct."

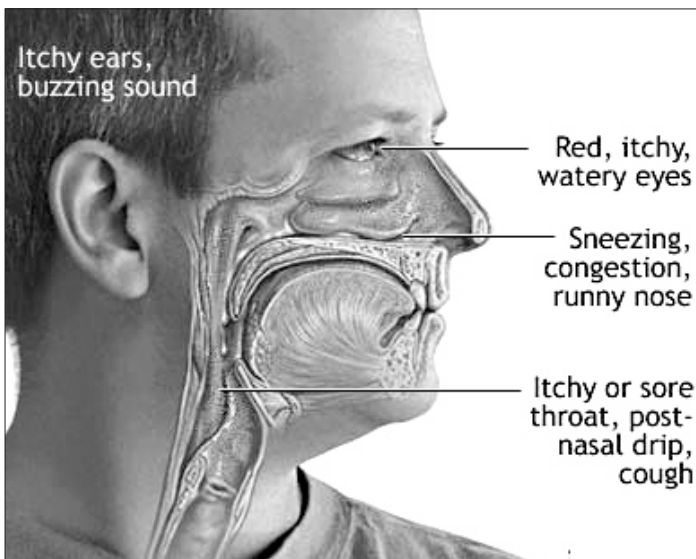
"I think this construct is not an embryo," he said. "There is no fertilisation in our process. We use nuclear transfer technology. I can say this result is not an embryo but a nuclear transfer construct."

The sheep Dolly, the first adult mammal cloned, was made using nuclear transfer, in which the nucleus is removed from an egg cell, replaced with the nucleus of the animal or person to be cloned, and then fused. The egg begins dividing as if it had been fertilised and sometimes becomes an embryo.

"There is no reason ever to believe one of these things could ever become a human being," said Magnus, who with Cho wrote a commentary on the work.

.....  
Source: <http://www.reuters.com>

## Easy way to get rid of nasal congestion



There are lots of people suffering from common cold and sinusitis. They most usual discomfort of these diseases are nasal congestion. The nasal airways are blocked and patients suffer from severe headache in most cases.

But people can easily overcome the problem by using over-the-counter nasal decongestant that is found almost in every dispensary. Xylometazoline

nasal drops are very effective to clear the nasal block and helps people get rid of the irritating consequence of common cold and sinusitis. Daily 2 to 3 drops in each nostril is recommended. The strength for adult and child are 0.1% and 0.05% respectively.

Xylometazoline is the generic name of the drop which are available in various trade names in the market.

## Diet high in milk may cut heart disease risk

A diet high in milk does not increase the risk of heart disease and stroke, a new study suggests. On the contrary, it may protect against stroke and heart disease. The authors of the study feel that the present perception that milk is bad for the heart harmful "should be challenged, and every effort should be made to restore it to its rightful place in a healthy diet."

The study involved 665 men in South Wales who were between 45 and 59 years of age when first evaluated from 1979 to 1983. After recording their weight and food intake for seven days, the subjects were followed for 20 years to assess the occurrence of cardiovascular events.

At the start of the study, virtually all of the men reported drinking whole (full fat) milk, but later on virtually all had switched to skim or semi-skim milk.

Men whose milk intake was at or above the median level (187 mL per day) were 48 percent less likely to suffer a stroke and 12 percent less likely to have a heart attack or other cardiac event than men who drank lesser amounts of milk.

This finding "challenges the belief that because milk drinking raises blood cholesterol level, it



increases the risk of vascular disease," Dr. P. C. Elwood, from Llandough Hospital in Cardiff, UK, and colleagues expressed.

The authors of the study caution that more study is needed to fully characterise the association between milk intake and the risk of cardiovascular events. Nevertheless, they also point out that such a study might have to involve more than 20,000 subjects, a number of whom would be obliged to avoid milk for as long as 5 years.

.....  
Source: [Journal of Epidemiology and Community Health](http://www.journalofepidemiologyandcommunityhealth)

## Newer test for the diabetics are more reliable

### Life is better under 7

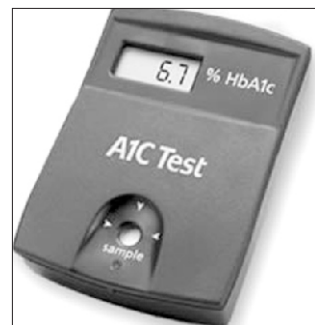
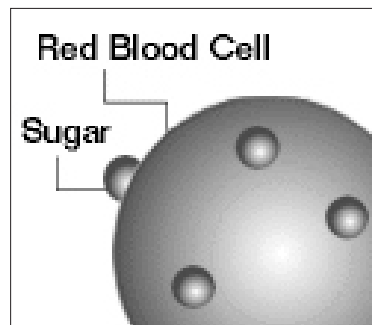
TAREQ SALAHUDDIN

'Mr D' is a diabetic patient who does not lead a disciplined life while taking insulin regularly. He takes sweet, carbohydrate as he likes, does not exercise. But he regularly goes to BIRDEM for check up his status of diabetes. A few days before going to BIRDEM he starts exercise, control and change his food habit. As a result, his blood sugar level is normal as per the diagnostic markers like fasting or random blood sugar test, which does not reveal the actual status of his blood sugar. Then what is the effective test for this person. HbA1C or simply A1C is the ultimate solution for this sort of persons. Worldwide HbA1C is now recommended as the standard test to measure one's blood sugar level.

### What is HbA1C and HbA1C test

Haemoglobin (Hb) is an oxygen-carrying pigment. It is what makes 'Red Blood Cell' (RBC) red. Glucose sticks to the haemoglobin to make a 'Glycosylated haemoglobin', called Haemoglobin A1C or HbA1C. The more glucose in the blood, the more HbA1C will present in the blood. It reveals a blood sugar picture over a particular duration of time.

The HbA1C test is a simple laboratory test that shows the average amount of sugar in



Blood sugar binds with the haemoglobin of RBC (Left).

The easy-to-use A1C test kit (Right).

your blood over the last two to three months. It is the best way to find out whether your diabetes is under control. All people with diabetes should have a HbA1C test at least twice a year. If the treatment changes or if the blood sugar level remains too high, one should get a HbA1C test at least every three months until the blood sugar level improves. Regular testing helps both the patients and the doctors to track the blood sugar levels over time and plan long term treatment options to reach the target level of control.

The haemoglobin A1C goal for people with type 2 diabetes should be less than 7%. It is revealed from the findings of a major diabetes study, the 'Diabetes Control and Complications Trial (DCCT)' that people who keep their haemoglobin A1C levels close to 7% have a much better chance of delaying or preventing complications that affect the eyes, kidneys and

nerves than people with haemoglobin A1C of approximately 9%. The 'United Kingdom Prospective Diabetes Study (UKPDS)', a 20-year study that involves more than 5000 people with type 2 diabetes, showed that intensive blood glucose control significantly reduces the risk of major diabetic eye disease and early kidney damage.

If your A1C test result is too high, talk to the doctor about how to lower a daily diet plan, stick to a physical activity programme, take your prescribed type 2 diabetes medicines and consult the physician often.

The test is available at different diagnostic centres. You can also test your A1C level at your home like blood glucose test. There are many easy-to-use kits in the market available for the test.

### Benefit of the test

It measures the glucose level in your blood over a specific period of time. So there is almost no chance to get a mask-

ing result. Getting to A1C goals reduces complications of diabetes. Treating to target can delay or prevent long term micro- and macrovascular complications. Poor glycaemic (glucose level in blood) control has been correlated to progressive complications.

### Recommended level of HbA1C

The recommended level of HbA1C is less than 7. Diabetic patients should keep their A1C level below 7 to maintain healthy life. It is said that life is better under 7.

### How to lower HbA1C level

You can do a lot to bring down high blood sugar level and get it under control. There are newer insulin preparation like insulin glargine (Lantus) to keep A1C level under control. Regular monitoring is essential to control the level.

## 5 tips for quick and easy weight loss!

How many times have you wished that you could swallow a pill and wake up in the morning thinner? It would be really nice if such a pill existed, but it does not. So, with that in mind, what can we do for quick, easy and sure weight loss? Just follow the following advice.

1. Drink 64+ ounces of water each and every day.
2. Get cardio exercise every day; gradually building to the point where you get a minimum of 30 minutes a day.
3. Add fresh raw fruits and vegetables to your daily diet.
4. Limit the "bulky" carbs: white flour, potatoes, cereal, etc.
5. Identify the biggest obstacle you consistently face that stymies your weight loss and overcome it, rid yourself of it and banish it from your life forever!

It is not too hard or impossible as it seems to be. The above mentioned 5 tips are really nothing more than a recipe for healthful living. You are not food combining impaired. You are not willpower deficient. Your weight is, in most cases, a direct result of what you are consuming and how much you are not moving.

Follow these 5 easy, quick to implement and sure changes that will lead you to your weight loss dreams and goals!

.....  
Source: <http://www.ediets.com>



## Soda, sleeping pills tied to nighttime heartburn

Cutting back on carbonated soft drinks may help heartburn sufferers sleep more soundly, a study published suggests.

Among more than 15,000 adults surveyed on heartburn symptoms, researchers found that drinking soda, taking benzodiazepine-type sleeping pills, and being overweight were all associated with an increased risk of nighttime heartburn woes.

Men and women with high blood pressure or asthma were also at greater risk of overnight symptoms, the study found. Heartburn refers to the fiery sensation in the chest caused by stomach acids backing up into the esophagus. Frequent bouts of heartburn may be indicative of gastroesophageal reflux disease, or GERD, a disorder in which the muscular valve between the esophagus and stomach fails to close properly, allowing acids to back up into the throat.

GERD can cause corrosive changes in the esophagus that make swallowing difficult, or that in some cases lead to Barrett's esophagus, where cells in the esophageal lining become abnormal. In a small number of people, Barrett's esophagus precedes the development of esophageal cancer. It is thought that nighttime acid reflux, in particular, may be a sign of more severe GERD -- making it important to uncover the risk factors for nighttime symptoms, Dr. Ronnie Fass, the study's lead author, told.

Fass, who is with the University of Arizona College of Medicine and the Southern Arizona VA Health Care System in Tucson, said that his team's findings point to several potential ways to prevent heartburn during sleep.

"Avoid carbonated beverages, in particular with dinner," he advised. "And definitely don't have them after dinner." For heartburn sufferers, the problem with soft drinks is their high acid content -- higher even than that of coffee, according to

Fass. On top of that, the carbonation that makes soda bubbly introduces carbon dioxide into the stomach, worsening the situation for the heartburn-prone. In their study, Fass and his colleagues found that of 15,314 older men and women surveyed, one-quarter said they had nighttime heartburn symptoms. Besides soda drinking, several other risk factors for the problem emerged.

One was the use of benzodiazepines, a class of sedatives commonly used for insomnia. Research has shown that the drugs can lower the pressure of the sphincter that opens and closes the passage-way from the esophagus to the stomach. Fass advised, "I would recommend that people who suffer from this avoid benzodiazepines." The researchers also found that people with high blood pressure or asthma were at greater risk of heartburn during sleep. Regarding the high blood pressure finding, Fass said the disease itself probably does not trigger heartburn; instead, the blame may lie with high blood pressure medications, or with other factors that often accompany high blood pressure -- such as excess weight.

In contrast, although asthma medications can have the side effect of heartburn, the disease itself may sometimes lead to acid reflux, Fass said. Asthma may trigger heartburn by increasing pressure between the chest and abdomen.

Higher body mass index (BMI), a measure of weight in relation to height, was also tied to a greater risk of nighttime heartburn -- not surprisingly, the researchers note, given the known association between excess pounds and GERD. That, Fass said, makes weight loss another possible way to prevent nighttime acid reflux.

.....  
Source: [Chest, May 2005](http://www.chestjournal.org)