Cystic fibrosis: a deadly disease of children

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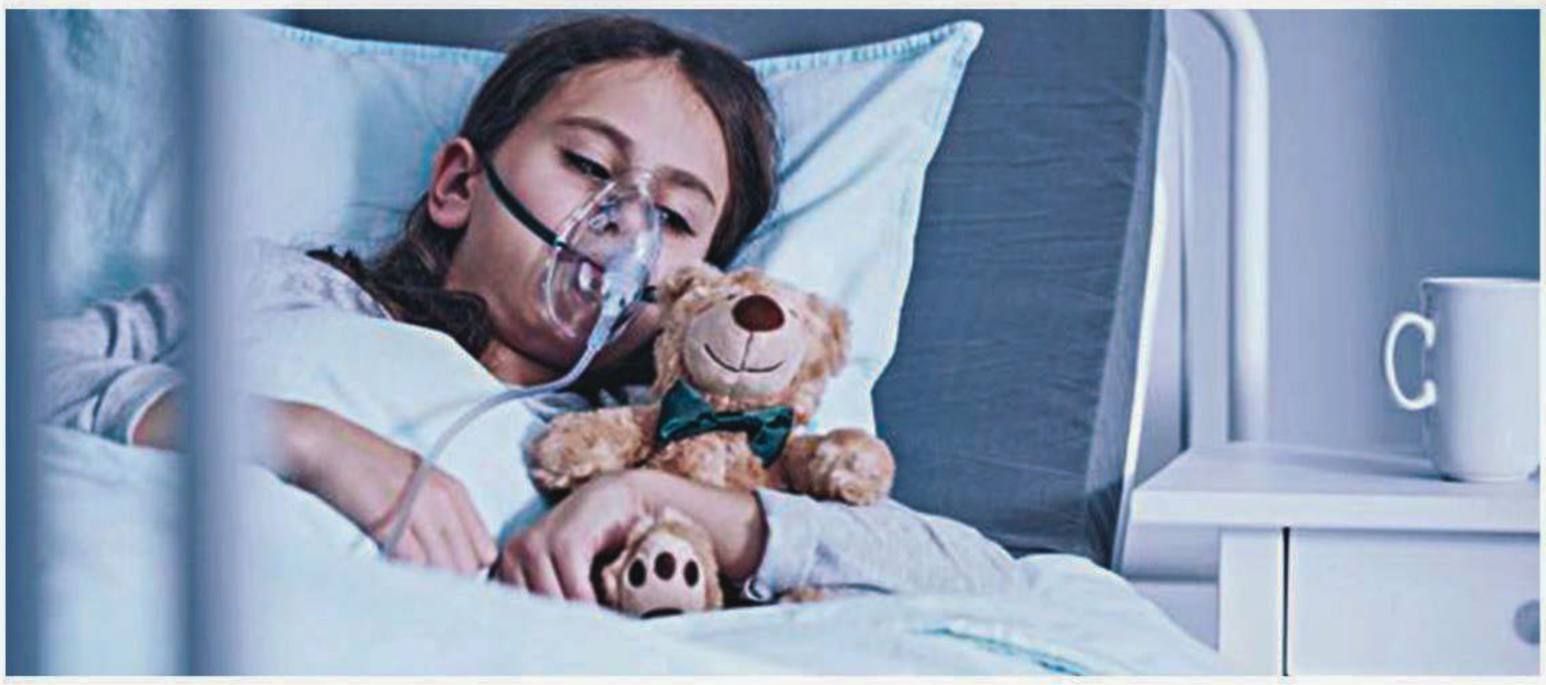

Cystic fibrosis (CF) is a hereditary deadly disease affecting mainly the lungs. It is an inborn disease and the chance is more in children when the parents are cousins.

The disease mainly affects the exocrine glands of the body. Due to mutation of the Cystic fibrosis transmembrane conductance regulator (CFTR) gene, chloride ion secretion is reduced and there occurs increased reabsorption of sodium ion and water resulting the thick secretion in the gland. When the secretion is infected by micro-organisms like Pseudomonas, the infection is life long and the lungs are damaged gradually.

The other organs affected are the pancreas, intestine and liver. Initially, the small children suffer from bronchiolitis followed by repeated pneumonia and later on bronchiectasis (dilatation of the bronchus) and finally respiratory failure. The children with CF are also likely to suffer from recurrent diarrhoea, bulky stool, malabsorption and ultimate severe malnutrition.

When suspected, the disease can be diagnosed by examining the sweat and increased level of sweat chloride ion confirms the diagnosis. In the developed country, the life span of a person with CF is about 37 years with good management.

We the child chest specialists in Bangladesh are facing quite infrequently CF in our clinical practice. Recurrent respiratory distress, very poor weight gain and occasional diarrhoea are the main presenting features. We then suggest chest x-ray or CT scan to look for bronchiectasis. The final diagnosis is done by doing sweat test.

Our experience is that the children are suffering from the disease very early in the first 12-18 months of age but the diagnosis is delayed until 7-8 years of life because of unawareness of our physicians about the existence of CF in our children. By this time, the damage of the lungs is well advanced. The parents move from one doctor to another with a lot of harassment.

The disease is treated with clearing of the chest in special ways by using chest physiotherapy and mucolytics, antibiotics, replacement of pancreatic enzymes, vitamins, calcium and others.

The child needs high energy diet with supplemental fats. The child has to be followed up frequently by the child chest specialists. Early diagnosis and effective treatment can save the children and their parents from unnecessary sufferings.

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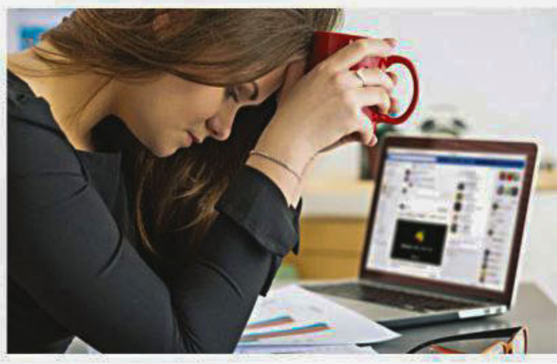
SOCIAL MEDIA



More social media use linked to more depression and anxiety in teens

Adolescents' risk for problems like depression and anxiety increases as the amount of time they spend on social media increases, according to a prospective, longitudinal study in JAMA Psychiatry.

Nearly 7,000 adolescents answered questions about internalising problems (e.g., depression, anxiety) and externalising problems (e.g., bullying, attention issues) when they were aged 12–15 years, reported on their social media use at ages 13–16 years, and then reported on internalising and externalising problems again at ages 14–17 years.

After adjustment for past depression and other confounders, those who spent roughly 3 to 6 hours daily on social media were 60% more likely to later experience internalising problems than those who did not use social media. Adolescents who used social media for more than 6 hours daily had a 78% increased risk. Findings for externalising problems were inconsistent.

As potential mechanisms, the researchers note that greater social media use may result in poor sleep quality and increased risk for cyberbullying.

HEALTH *bulletin*

Caution to avoid vaping products with THC oil, vitamin E acetate

The US Food and Drug Administration (FDA) has found significant amounts of vitamin E acetate in most of the tetrahydrocannabinol (THC) vaping products tested from people who have become ill with severe respiratory illness. The agency says that "it is prudent to avoid inhaling this substance."

However, not all of the people who have become sick have used these products, so the FDA cautions that it cannot yet say that the vitamin E acetate is causing illness.

The agency notes that people cannot be certain whether a vaping product contains vitamin E acetate, and it reminds users not to buy vaping products from the street. Consumers should also avoid using THC oil or adding material to store-purchased vaping products.

To date, over 450 people have developed severe respiratory illness after vaping.

First-of-its-kind oral diabetes drug got approval in the US

Star Health Report

Novo Nordisk announced that the US Food and Drug Administration (FDA) has approved Rybelsus® (oral semaglutide tablets) on Friday September 20, 2019, as an adjunct to diet and exercise to improve glycaemic control in adults with type 2 diabetes mellitus.

The world's biggest producer of diabetes drugs already sells an injectable once-weekly version of semaglutide under the brand name Ozempic. But now it is hoped to transform the market by offering patients a non-injectable treatment for the disease. The new drug stimulates insulin production in patients with type 2 diabetes, the most common form of the disease, and is meant to be taken once a day.

Rybelsus®, the brand name for oral semaglutide in the US, is the first approved

analogue of the naturally occurring glucagon-like peptide-1 (GLP-1) receptor agonist in a tablet. It is administered once daily and is approved for use in two therapeutic dosages, 7 mg and 14 mg.

The approval of Rybelsus® is based on the results from 10 PIONEER clinical trials which included 9,543 adults with type 2 diabetes.

Rybelsus® more effectively lowered blood sugar than sitagliptin and empagliflozin. Furthermore, treatment with Rybelsus® resulted in up to 4.4 kg reduction in body weight. Rybelsus® demonstrated a safe and well-tolerated profile across the PIONEER programme, with the most common adverse event being mild to moderate nausea which diminished over time.

"We are very excited that we can make the first oral GLP-1 available in the US and thereby expand the treatment options for adults living with type 2 diabetes," said Mads Krogsgaard Thomsen, executive vice president and chief science officer of Novo Nordisk. "Novo Nordisk has a very long legacy of developing innovative injectable medicines for people living with diabetes and, with the approval of Rybelsus®, we are now able to bring our innovation into the market for oral antidiabetics."

Novo Nordisk plans to make Rybelsus® available to adults with type 2 diabetes in the US in the fourth quarter of 2019.

Rybelsus® is currently under review by several regulatory agencies, including the European Medicines Agency and the Japanese Pharmaceuticals and Medical Devices Agency.

The approval follows close on the heels of the European Association for the Study of Diabetes (EASD) annual meeting, which wrapped Friday in Barcelona. And there, the excitement over Rybelsus was palpable, Novo CSO Thomsen said.

Clinically silent relapsing malaria may still pose a threat

Nonhuman primates with clinically undetectable Plasmodium relapse infections still harbor parasitic gametocytes that may be infectious to mosquitoes, according to a study published in the open-access journal PLOS Pathogens recently. The study has important epidemiological implications relevant to malaria elimination strategies.

The protozoal parasite Plasmodium vivax is a major cause of malaria – a life-threatening mosquito-borne disease responsible for hundreds of thousands of deaths globally each year.

They found that relapses were clinically silent compared to initial infections, and they were associated with a robust memory B cell response. This response resulted in the production of antibodies that were able to mediate clearance of relapsing, asexual parasites.

Despite this rapid immune protection, the sexual-stage gametocytes, which may be infectious to mosquitoes, continued to circulate.

According to the authors, the number of clinically silent relapse infections, and their infectiousness to mosquitoes, remains largely unknown and should be evaluated carefully in the future.

As a next step on the path to eliminating P. vivax and other relapsing malaria parasites, studies should identify the factors that influence relapse pathogenesis, immunity, and infectiousness to mosquitoes.