Revolutionary two-pronged attack that's beating 'incurable' blood cancer brings new hope

LONDON: Thousands of Britons battling incurable blood cancer could be thrown a lifeline thanks to a new 'two-pronged-attack' combination drug therapy.

Until now, patients with chronic lymphocytic leukaemia – also known as CLL, one of the most common types of blood cancer in adults – had to endure repeated rounds of gruelling chemotherapy to keep their symptoms at bay.

More than 4,600 people are diagnosed with CLL in the UK every year. For most, the treatment eventually stops working and almost 1,000 die from the disease annually.

Now, following promising early results of a trial testing a new drug combination, experts believe they may potentially have a cure.

The trial, called Clarity, recruited 54 patients in Britain aged between 20 and 80. All had previously had chemotherapy and had been in remission before their cancer returned.At the end of 2016, Lelia Duley was offered the chance to join the Clarity trial, and in February 2017 she began treatment

At the end of 2016, Lelia Duley was offered the chance to join the Clarity trial, and in February 2017 she began treatment

The group were initially given a dose of the targeted drug ibrutinib every day for two months. A daily dose of venetoclax, a type of chemotherapy, was then added.

And the results have been astounding. After two years, 20 patients showed no signs of cancer in their bodies and were able to stop treatment entirely.

'The response rates we have seen have far exceeded what we had expected,' says lead investigator Professor Peter Hillmen, from Leeds Teaching Hospitals NHS Trust.

'The fact that some patients have already been able to come off treatment and remain leukaemia-free is very encouraging, and we hope more will soon be able to do the same.

'We can't find chronic lymphocytic leukaemia in their blood or bone marrow.' Dr Alasdair Rankin, director of research at the blood cancer charity Bloodwise, which is funding the trial, said: 'This type of blood cancer remains incurable today, but it's a really exciting time. It's not a matter of if but when we have a cure for chronic lymphocytic leukaemia, and Clarity is a step in the right direction.'

It occurs when the bone marrow, the spongy material inside bones responsible for manufacturing blood cells, makes too many lymphocytes – a type of white blood cell – that don't work properly.

Instead of protecting the body, the malfunctioning immune cells multiply in an uncontrolled way and 'crowd out' functioning ones, increasing the risk of infection.

The cancer is often picked up during routine health checks and blood tests, before any symptoms develop. But it may result in severe fatigue, night sweats, unusual bleeding and bruising.

The disease can also cause glands in the body to swell and develop into lumps.

This is the result of a build-up of abnormal lymphocytes in lymph nodes, usually in the neck, armpits and groin.

It may also cause swelling in the spleen – the most important organ in the immune system – stopping it from working properly.

The cancer is often picked up during routine health checks and blood tests, before any symptoms develop (stock image) Initially, most patients will simply be monitored, as the cancer can be very slow to progress. But about half will go on to need some form of intensive chemotherapy, which works by destroying abnormal cells and interfering with the way they multiply.

This usually makes symptoms go away for between two and six years. But in most cases, the gap between treatment will get shorter and shorter until chemotherapy is no longer effective.

Some patients may be offered targeted drugs, which help the body control growth of the cancer, or radiotherapy, to shrink enlarged lymph glands or a swollen spleen.

Stem cell or bone marrow transplants are very rarely used to try to control or get rid of CLL completely. Until now, this has been the only potential cure for patients. But the treatment is intensive, risky for older people and can result in serious complications.

Patients must first have high-dose radiotherapy or chemotherapy to destroy cancerous cells in the body, before being given donated stem cells, usually from a brother or sister, through their veins. In some patients, the transplanted cells may attack other cells in the body, which can be life-threatening. But the new combination treatment could offer a better alternative. In disease-free adults, white blood cells multiply very quickly to fight infection before self-destructing. But researchers have found that in patients with chronic lymphocytic leukaemia, the switch that triggers growth is permanently switched on.

The abnormal white blood cells also fail to self-destruct in the same way as healthy cells. In the Clarity trial, the researchers use ibrutinib to target and switch off a protein linked to cell growth and movement in the cancerous blood cells. At the same time, venetoclax is used to switch off the proteins in cancer cells that help to keep them alive. —**AFP**

Just 1 dose of the HPV vaccine may prevent infection: Study

LONDON: Just one dose of the human papillomavirus (HPV) vaccine may prevent infection from potential cancer-causing virus, suggests new research. Results of the study, which included only women participants published in the journal JAMA Network Open, suggest that a single dose of HPV vaccine may be as effective as the currently recommended two- or three-dose series.

However, it is too early for people to rely on a single dose of the vaccine for protection, according to senior author Ashish Deshmukh, Assistant Professor at The University of Texas Health Science Center at Houston (UTHealth).

"HPV vaccine coverage is less than 10 per cent globally because of poor vaccine uptake rates in many resource-limited countries. Ensuring boys and girls receive their first dose is a big challenge in several countries and a majority of adolescents are not able to complete the recommended series due to a lack of intensive infrastructure needed to administer two or three doses," Deshmukh said.

"If ongoing clinical trials provide evidence regarding sustained benefits of a one-dose regimen, then implications of single-dose strategy could be substantial for reducing the burden of these cancers globally," he added.

According to the US Centers for Disease Control (CDC), 34,800 new cancer diagnoses are linked to HPV annually. The virus is thought to account for more than 90 per cent of all cervical and anal cancers, more than 60 per cent of all penile cancers, and approximately 70 per cent of all oral cancers.

Although the study participants included only women, the CDC recommends a two-dose regimen for all children, starting the series before age 15, or a three-dose regimen if the series is started between ages 16 to 26.

The latest generation of HPV vaccine can protect against nearly 90 per cent of cancer-causing HPV infections. Yet, current vaccinations rates are less than ideal.

"The current HPV vaccine dosing regimen can be cumbersome for people to understand. If one dose is proven effective in trials, the vaccine regimen will be simplified," said UTHealth School of Public Health assistant professor and lead author Kalyani Sonawane. —**Reuters**

High BMI May Improve Cancer Survival

NEW YORK: Above average or high BMI – often linked to cancers, diabetes, cardiovascular and other diseases – may in some cases improve the chance of survival among certain cancers, new research from Flinders University indicates.

Focusing on clinical trials of atezolizumab, a common immunotherapy treatment for non-small-cell lung cancer (NSCLC), the Australian cancer researchers found improved responsiveness to the drug in those with a high body mass index (BMI).

The surprising result – published in JAMA Oncology – contrast with regular warnings about the health risks of patients who are overweight and obese.

"This is an interesting outcome and it raises the potential to investigate further with other cancers and other anti-cancer drugs," says lead investigator Dr Ganessan Kichenadasse, a medical oncology researcher at the Flinders Centre for Innovation in Cancer.

"We need to do further studies into the possible link between BMI and related inflammation, which might help to understand the mechanisms behind paradoxical response to this form of cancer treatment."

"Previous studies have explored a concept called as 'obesity paradox' where obesity is associated with increased risks for developing certain cancers and, counter-intuitively, may protect and give greater survival benefits in certain individuals. "Our study provides new evidence to support the hypothesis that high BMI and obesity may be associated with response to immunotherapy," says Dr Kichenadasse. The Flinders researchers found NSCLC patients with high BMI (BMI ? 25 kg/m2) in four clinical trials had a significant reduction in mortality with atezolizumab, apparently benefiting from immune checkpoint inhibitor (ICI) therapy. Treatment options for this form of lung cancer are rapidly evolving and includes ICIs, molecular targeted drugs and chemotherapies. "While our study only looked at baseline and during treatment, we believe it warrants more studies into the potentially protective role of high BMI in other cancer treatments." —**AFP**

Flu can be deadly but here's why the common cold can be a killer too

NEW YORK: Most people know that the flu can kill. Indeed, the so-called Spanish flu killed 50 million people in 1918 – more than were killed in the first world war. But what about the common cold? Can you really catch your death?

The cold is a collection of symptoms – coughing, sneezing, a runny nose, tiredness and perhaps a fever – rather than a defined disease. Although it shares a lot with the initial symptoms with the flu, it's a very different infection.

Peter Barlow, Professor of Immunology and Infection and Head of Research of the School of Applied Sciences, Edinburgh Napier University

Rhinovirus causes about half of all colds, but other viruses can cause one or more of the symptoms of a cold, including adenovirus, influenza virus, respiratory syncytial virus and parainfluenza virus.

The common cold is normally a mild illness that resolves without treatment in a few days. And because of its mild nature, most cases are self-diagnosed. However, -. Complications from a cold can cause serious illnesses and, yes, even death – particularly in people who have a weak immune system.

The common cold can have deleterious effects on certain people (Photo: George Marks/Retrofile/Getty) The common cold can have deleterious effects on certain people (Photo: George Marks/Retrofile/Getty)

For example, studies have shown that patients who have undergone a bone marrow transplant can have a higher likelihood of developing a serious respiratory infection. While rhinovirus is not thought to be the main cause of this, other viruses that are associated with symptoms of the common cold, such as RSV, adenovirus and parainfluenza virus, are.

There is, of course, more than one way for someone to become very sick after infection with a respiratory virus. Some viruses, such as adenovirus, can also cause symptoms throughout the body, including the gastrointestinal tract, the urinary tract and the liver.

Other viruses, like the influenza virus, can themselves potentially cause severe inflammation in the lungs, but they can also lead to particularly serious conditions, such as bacterial pneumonia.

A virus-induced bacterial infection is one way a cold or flu virus can lead to death. While the exact mechanisms of how bacterial infections can be primed by viral infection are still being investigated, a possible way it can occur is through increased bacterial attachment to cells of the lung. For example, rhinovirus has been shown to increase the presence of a receptor called PAF-r in lung cells. This can allow bacteria, such as Streptococcus pneumoniae, to bind more effectively to the cells, increasing the likelihood of it leading to a severe condition like pneumonia.

Unfortunately, a cold can also have more severe symptoms in the very young and the very old. Older people are more likely to develop a more serious infection compared with adults or older children. And people who smoke – or who are exposed to second-hand smoke – are also more likely to get a cold and have more severe symptoms. There are vaccinations for flu, but not the common cold (Photo: Joe Raedle/Getty)

Another group of people who are more severely affected by infection with cold-causing viruses are people with an existing lung condition. They can include people with asthma, cystic fibrosis or chronic obstructive pulmonary disease (COPD). Infection with a virus that causes inflammation of the airways can make breathing much harder. People with COPD who catch a mild cold virus are also at risk of developing a bacterial infection.

While the bacterial infection in these patients can be treated with antibiotics, there is no effective antiviral treatment against all types of rhinovirus. For other respiratory viruses, such as influenza, there is an effective vaccine that can help protect vulnerable people from the flu virus, including asthmatics, the very young and the very old. There is not one single element that dictates how severe an infection with a cold virus will be, but there are many conditions or factors that can raise a red flag. —**AFP**

Study uncovers key protein that supports growth of many colorectal cancers

Researchers at the University of Toronto have identified a key protein that supports the growth of many colorectal cancers. The study, which will be published December 27 in the Journal of Cell Biology, reveals that a protein called Importin-11 transports the cancer-causing protein βcatenin into the nucleus of colon cancer cells, where it can drive cell proliferation. Inhibiting this transport step could block the growth of most colorectal cancers caused by elevated βcatenin levels.

Around 80% of colorectal cancers are associated with mutations in a gene called APC that result in elevated levels of the βcatenin protein. This increase in βcatenin is followed by the protein's accumulation in the cell nucleus, where it can activate numerous genes that drive cell proliferation and promote the growth and maintenance of colorectal tumors. But how βcatenin enters the cell nucleus after its levels rise is poorly understood.

Because the molecular mechanisms underlying βcatenin nuclear transport remain unclear, we set out to identify genes required for continuous βcatenin activity in colorectal cancer cells harboring APC mutations."

Stephane Angers, professor in the Department of Pharmaceutical Sciences at the University of Toronto's Leslie Dan Faculty of Pharmacy

National veteran dataset will help dissect the relationship between mental illness and prostate cancer

Using CRISPR DNA editing technology, Angers and colleagues, including graduate student Monika Mis, developed a new technique that allowed them to screen the human genome for genes that support βcatenin's activity in colorectal cancer cells after its levels have been elevated by mutations in APC. One of the main genes they identified was IPO11, which encodes a protein called Importin-11 that is known to be involved in nuclear import.

Angers and colleagues found that Importin-11 binds to βcatenin and escorts it into the nucleus of colorectal cancer cells with mutations in APC. Removing Importin-11 from these cells prevented βcatenin from entering the nucleus and activating its target genes.

The researchers discovered that Importin-11 levels are often elevated in human colorectal cancers. Moreover, removing Importin-11 inhibited the growth of tumors formed by APC mutant cancer cells isolated from patients.

"We conclude that Importin-11 is required for the growth of colorectal cancer cells," Angers says. Learning more about how Importin-11 transports βcatenin into the nucleus may help researchers develop new therapies that block this process and reduce the growth of colorectal cancers caused by mutations in APC. —**AFP**

Samoa lifts state of emergency over measles epidemic

Samoa has lifted a six-week state of emergency, which was put in place amid a measles epidemic that killed 81 people and infected more than 5,600.

Just 200,000 people live on the South Pacific island nation, and vaccination rates are far lower than in neighbouring countries.

Most of those killed in the outbreak were babies and young children.

Infection rates slowed earlier this month after a vaccination drive pushed immunisation rates towards 95%.

According to aid agencies, this is the level required in order to have "herd immunity" against the disease.

Under the emergency orders put in place last month, schools were closed, travel and public gatherings were restricted, and red flags were placed outside the homes of people who hadn't been vaccinated.

How did the disease spread?

Globally, measles cases are on the rise - including in the US and Germany - as parents forego life-saving vaccines because of false, repeatedly debunked theories linking childhood immunisation with autism. Earlier this year a measles outbreak hit Auckland in New Zealand - a hub for people travelling to and from many small Pacific islands.

In Samoa, low vaccination rates are in part due to the deaths of two children in 2018. The deaths were wrongly attributed to the vaccination against measles, mumps and rubella (MMR) - but were actually caused by nurses mixing the vaccine with a muscle relaxant instead of water. The countries that trust vaccines the least We gave up Christmas to fight measles in Samoa The wrong jab that helped cause a measles crisis

But this raised local fears around vaccines, and were exploited by anti-vaccination campaigners - also known as "anti-vaxxers". Prominent anti-vaxxer Edwin Tamasese was arrested in Samoa earlier this month and charged with incitement against a government order.

Mr Tamamese had posted false theories about measles on Facebook, and instead promoted the use of ineffective remedies to treat the deadly illness - such as using papaya leaf extract and vi-

Your 'flu' might actually be an allergy

NEW YORK: Are you experiencing a sore throat, stuffy nose and sneezing bouts? Blame it on the changing weather which doctors say is a common allergy trigger.

Dr Noordin Wadhvaniya, respiratory medicine specialist at the Canadian Specialist Hospital, said changing weather always comes with an onset of respiratory allergies and asthma attacks. "In winter, as the time spent indoors increases, our exposure to indoor allergens also increases. For example, AC vents at homes, offices and cars can cause allergies and infections if not cleaned from time to time. —**AFP**