

Insulin-producing cells offer hope for people with type 1 diabetes

Scientists are working on a new technique to produce cells with insulin-secreting capabilities, which could eventually be used in a transplantation process to help patients with type 1 diabetes. The researchers used the messenger RNA of a transcription factor called MAFA - a protein that controls which genes are turned off or on in the genome. The mRNA is transformed into protein before binding to cellular DNA. This enables changes to occur in cellular functions.

Source : Medical news today

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Medical News

A New study found Cancer May Be a Hidden Danger to the Heart: Report

People with cancer could be suffering silent, unseen heart damage due to their malignancy. Cancer is the uncontrolled growth of abnormal cells anywhere in a body. There are over 200 types of cancer. Anything that may cause a normal body cell to develop abnormally potentially can cause cancer; general categories of cancer-related or causative agents are as follows: chemical or toxic compound exposures, ionizing radiation, some pathogens, and human genetics. Researchers found that newly diagnosed cancer patients carried high blood levels of hormones and body chemicals that are normally telltale signs of heart disease, the study authors said. Those chemical indicators for heart disease increased with the severity of a person's cancer, and were strongly associated with a higher risk of death for these patients.

The findings suggest cancer could be doing damage to heart tissue, even though the person may not be showing clinical evidence of heart disease, the researchers concluded. The chairwoman of the American College of Cardiology's Cardio-Oncology Section, said the study could be "paradigm changing" in the way doctors view cancer and heart disease. Cardiologists and cancer doctors usually focus solely on the diseases of their chosen specialty. Those walls have crumbled slightly in recent years, as more has been learned about the toxic effects that chemotherapy for cancer can have on the heart. As a result, cancer doctors often will check for chemical indicators of heart disease before putting a patient on chemotherapy, to make sure the cancer treatment won't cause potentially fatal heart disease.



Medical News (cont..)

But the patients in this study had high levels of these indicators before ever receiving chemo therapy, and their levels grew worse as their cancer progressed. "That's an eye-opening thing," "researchers saying there's a cross-talk between cancer and cardiovascular status. There's a biology there we need to work more to understand." A study was conducted on 555 people treated for cancer at Vienna General Hospital in Austria. Before the patients began any treatment that might have damaged their heart, researchers performed a panel of tests to check for signs of heart disease in their blood. The tests looked at blood levels of several heart-related hormones, some proteins associated with inflammation, and a chemical called high sensitive troponin that regulates heart muscle contractions. Troponin, for example, is used by doctors to test whether a person has suffered an undetected heart attack. "It's something that really only shows up when there's damage to the heart". The researchers tracked the patients' progress for an average of two years. During the monitoring period, about a third of the patients died.

Analysis of patients' blood samples showed that levels of troponin and all the hormones measured rose in tandem with cancer severity, and in some cases were 100 times higher than would be expected, the study authors reported. All the indicators were significantly associated with an increase in the person's risk of death from any cause, which rose between 21 percent and 54 percent, depending on the specific chemical indicator. "That does make you think that finding these things is telling us that the heart is impacted by the cancer". There are several ways that cancer could indirectly damage the heart without spreading to it, experts said. For example, the body might be trying to fight off the cancer by increasing inflammation. "One of the costs of mounting that inflammatory response is that it triggers some of the bad things we know it can do in the heart". Cancer might also directly harm the heart by releasing toxic chemicals that damage the muscle, said Dr. Alexander Lyon, a senior lecturer in cardiology at Imperial College London and a consultant cardiologist at the Royal Brompton Hospital, also in London.

"In the same way that the bodies skeletal muscle wastes away with advanced cancer, perhaps the heart muscle is also affected," said Lyon, who wrote an editorial accompanying the article. But there could be other explanations for telltale signs of cancer-related heart damage. These hormones and body chemicals might be released as part of the creation of tiny new blood vessels necessary for tumor growth, for example. Regardless, these results show that it is important to assess the heart health of cancer patients, and put them on medications to protect their hearts from damage caused by either their cancer or the treatment they receive for it, the experts said. "It would be great if we could keep people from having this process go on, because developing heart failure on top of having to fight cancer is extremely difficult for the patients," Bolger said. "We'd do anything to avoid that."

Source : *Healthday*

How can aspirin help to cure cancer?

A recent study, published in the journal *Cell*, suggests that aspirin could be effective in boosting the immune system in patients suffering from breast, skin and bowel cancer. While some studies warn that the use of aspirin in the fight against cancer is still some way off, experiments on mice have proven encouraging. Immunotherapy is growing in strength as a weapon against the disease, as research increasingly focuses on ways in which cancer apparently "tricks" the immune system into allowing it to develop. One way in which cancer avoids the immune system is through "befriending" T cells, which seek out unwanted elements such as bacteria and viruses in the body's fight against disease, but mysteriously, do not attack cancer cells. In the 1990s, a molecule that Japanese scientists called "Programmed Death 1" (PD-1) was found on the surface of T cells. US researchers then found that cancer tumors often produced a matching molecule, "Programmed Death Ligand 1" (PDL-1). In this way, the cancer is able to "trick" the T cells into joining, instead of fighting it, thus circumventing the immune system.

This discovery led to the development of a group of drugs known as "immune checkpoint blockade therapies." Another way in which cancers appear to subvert the immune system involves prostaglandin 2 (PGE2). PGE2 normally causes inflammatory response and fever in bacterial and viral infections, but it has been known for some time to promote tumor growth in the gastrointestinal tract. One theory is that the inflammatory process does not always end when it should. Chronic inflammation can eventually cause changes, such as the formation of new blood vessels and DNA mutations, which can give rise to tumors. Cells involved in certain types of inflammation have been found to produce secretions that promote tumors.

Reawakening the immune system

According to the team from the UK's Francis Crick Institute, who carried out this project, PGE2 molecules "dampen down" the response of the immune system, which enables the cancer cells to "hide." If PGE2 molecules can be destroyed, they say, the immune system will "reawaken," find and kill the cancer cells. PGE2 in the body is produced by Cyclooxygenase, known as COX-1 and COX-2 enzymes. COX inhibitors are currently in the spotlight as a way to prevent the production of PGE2 in cancer patients. One way of inhibiting COX is through nonsteroidal anti-inflammatory drugs (NSAIDs), such as aspirin.

This study found that certain types of cancer in mice were substantially slowed by combining aspirin or other COX inhibitors with immunotherapy. Given the "conservation of signature" across mouse and human melanoma, plus the fact that COX inhibitors appear to reduce gastrointestinal and breast tumors as well as melanoma, the team is hopeful that aspirin and similar drugs can be effectively used alongside current immunotherapy treatments to tackle bowel, breast and skin cancer.

Citing a study published in the *Journal of the National Cancer Institute*, the American Cancer Society suggest that low-dose aspirin could also be useful in treating and preventing recurrence of esophageal, ovarian, stomach and prostate cancer.

Written by Yvette Brazier

FDA Approves Durlaza (aspirin) ER Capsules for Secondary Prevention of Stroke and Acute Cardiac Events

September 8th, 2015 New Haven Pharmaceuticals, announced that the U.S. Food and Drug Administration (FDA) has approved Durlaza (aspirin), the first and only 24-hour, Extended Release Capsules, (162.5mg) for the secondary prevention of stroke and acute cardiac events, including myocardial infarction (heart attack).

“Durlaza is an aspirin formulation for secondary prevention in high-risk CVD patients. The aspirin delivery technology in Durlaza extends the release of aspirin in a manner designed to provide a stable antiplatelet effect over the course of the day. It is indicated to reduce the risk of death and myocardial infarction (MI) in patients with chronic coronary artery disease, such as patients with a history of MI or unstable angina pectoris or with chronic stable angina. It is also indicated to reduce the risk of death and recurrent stroke in patients who have had an ischemic stroke or transient ischemic attack

The most common side effects of Durlaza is Agitation, cerebral edema, coma, confusion, dizziness, headache, lethargy, seizures, Fluid and Electrolyte: Hyperkalemia, metabolic acidosis, respiratory alkalosis Dyspepsia, hepatic enzyme elevation, hepatitis, Reye's Syndrome, Hearing loss, tinnitus **Limitation of use:** Use immediate-release aspirin, not Durlaza in situations where a rapid onset of action is required (such as acute treatment of myocardial infarction or before percutaneous coronary intervention).

Source: U.S. Food and Drug Administration

FDA Approves Repatha (evolocumab) to Treat Certain Patients with High Cholesterol

August 27, 2015 -- The U.S. Food and Drug Administration approved Repatha (evolocumab) injection for some patients who are unable to get their low-density lipoprotein (LDL) cholesterol under control with current treatment options. Repatha, the second drug approved in a new class of drugs known as PCSK9 inhibitors, is approved for use in addition to diet and maximally-tolerated statin therapy in adult patients with heterozygous familial hypercholesterolemia (HeFH), homozygous familial hypercholesterolemia (HoFH), or clinical atherosclerotic cardiovascular disease, such as heart attacks or strokes, who require additional lowering of LDL cholesterol.

The most common side effects of Repatha include nasopharyngitis, upper respiratory tract infection, flu, back pain, and reactions such as redness, pain, or bruising where the injection is given. Allergic reactions, such as rash and hives, have been reported with the use of Repatha. Patients should stop using Repatha and get medical help if they experience symptoms of a serious allergic reaction.

Source: U.S. Food and Drug Administration

Medication Safety Updates

FDA Strengthens Heart Attack, Stroke Warning for Popular Painkillers

The U.S Food and Drug Administration strengthened the warning labels for widely used painkillers like ibuprofen and naproxen, saying they can increase the risk of heart attack or stroke. The FDA is asking people to think carefully about their use of nonsteroidal anti-inflammatory drugs (NSAIDs), particularly if they've already had a heart attack, according to a consumer update on the agency's website. The agency said it is taking this action based on recent data that shows the risk of heart attack or stroke can increase even after using NSAIDs for a short time. "They used to say they might cause risk of heart attack or stroke. Now we are saying they do cause increased risk of heart attack and stroke,"

In particular, people should avoid taking multiple products that contain NSAIDs, according to the revised FDA warning. Common over-the-counter NSAIDs include ibuprofen (Motrin, Advil) and naproxen (Aleve), but NSAIDs also can show up in combination medicines like multi-symptom cold products. "Be careful not to take more than one product that contains an NSAID at a time," Dr. Karen Mahoney, deputy director of the FDA's Division of Nonprescription Drug Products, said in the agency's announcement. People should check the list of active ingredients in the drug facts label if they aren't sure whether a product contains an NSAID, she said. Although aspirin is also an NSAID, the revised warning doesn't apply to aspirin, the FDA said.

The agency will require drug manufacturers to include the updated warning on both prescription and over-the-counter brands of NSAIDs. Over-the-counter NSAIDs are generally used to treat pain, inflammation and fever, while the stronger prescription brands are reserved for chronic and debilitating conditions like arthritis. People with heart disease or high blood pressure should consult a doctor before using an NSAID, the FDA said. However, the agency noted that the cardiovascular risk also is present in people without heart health problems. "Everyone may be at risk -- even people without an underlying risk for cardiovascular disease," said Dr. Judy Racoosin, deputy director of the FDA's Division of Anesthesia, Analgesia and Addiction Products. The FDA first added a boxed warning to NSAID labels for the cardiovascular risk in 2005, after Merck & Co. pulled its popular pain reliever Vioxx off the market the year before. Vioxx, an NSAID, had been linked to heart attack and stroke. Current labeling on over-the-counter NSAIDs warns patients to take the lowest dose possible for the least amount of time possible, and to not use them to treat pain for longer than 10 days. "These medicines have a long history of safety and efficacy when used as directed," the Consumer Healthcare Products Association, which represents nonprescription drug makers, said in a statement to the *Associated Press*. The group said it would cooperate with the FDA as it requests updates to the labels.

Source: U.S Food and Drug Administration

Medication Safety Updates

A new study says Antibiotic use may raise risk of type 2 diabetes

The greater the number of antibiotic prescriptions an individual has each year, the higher their risk for type 2 diabetes. This is according to a new study by researchers from Denmark.

Type 2 diabetes is the most common form of the condition, accounting for around 90-95% of all cases. It occurs when the body is unable to use the hormone insulin effectively, causing abnormal blood glucose levels. For their study, Dr. Mikkelsen and colleagues set out to determine whether the use of antibiotics may be associated with the development of type 2 diabetes.

Using data from three national health registries from Denmark, the team monitored antibiotic prescriptions for 170,504 individuals with type 2 diabetes, alongside those for 1.3 million individuals without the condition.

Narrow-spectrum antibiotics found to have strongest link with type 2 diabetes

The researchers identified a greater number of antibiotic prescriptions among individuals with type 2 diabetes, at 0.8 per year, compared with 0.5 antibiotic prescriptions annually for those without type 2 diabetes. From their analysis, the team found that individuals who filled more prescriptions for antibiotics were at greater risk for type 2 diabetes diagnosis.



Researchers found individuals who filled more prescriptions for antibiotics were more likely to be diagnosed with type 2 diabetes

While a number of antibiotics were linked with increased type 2 diabetes risk, the researchers say the strongest association was for narrow-spectrum antibiotics - antibiotics that are effective against specific bacteria - such as penicillin V.

Previous research has found antibiotic use can alter bacteria in the human gut. Last month, a study published in *Nature Communications* reported this to be the case among children who use multiple antibiotics. Other studies have found changes in gut bacteria may lead to reduced ability to metabolize sugar - a characteristic of type 2 diabetes. The authors say both of these previous findings may explain their latest results.

Dr. Mikkelsen notes, however, that further research is warranted to determine exactly what drives the association between antibiotic use and type 2 diabetes.

Source: Written by [Honor Whiteman](#)

قد يؤدي انخفاض مستويات فيتامين د إلى تراجع قدرات الدماغ بشكل أسرع

15-Sep-2015

أشارت دراسة حديثة إلى أنَّ وظائف الدماغ قد تتراجع بشكلٍ أسرع عند البالغين من كبار السنّ، الذين لديهم مستوياتٌ منخفضة من فيتامين د. اشتملت الدراسة على أكثر من ٣٨٠ ألف شخص، تابع الباحثون حالاتهم لخمس سنواتٍ في المتوسط، وكانت معدلاتُ الخرف أكثر انتشاراً بين الذين كانت مستوياتُ فيتامين د لديهم هي الأدنى .

قال مُعدُّ الدراسة جوشوا ميلر، رئيس قسم علوم التغذية لدى كلية العلوم البيئية والحيوية في جامعة روتغيز في نيو برونسويك/نيو جيرسي: "من غير الواضح ما هو الدور الذي قد يُمارسه فيتامين د، فهناك دليلٌ جيّد على أنَّ هذا الفيتامين يدخل إلى خلايا البدن وحتى خلايا الدماغ، لذلك من المُحتمل أنَّ يعمل على وقاية الدماغ من تشكّل اللويحات والتشابكات الدماغية tangles التي تترافق مع مرض الزهايمر".

"ولكن، هناك احتمال كبير في أنَّ معظم كبار السنّ الذين تجاوزوا ٧٥ عاماً من العمر في الولايات المتحدة يُعانون من نقص فيتامين د".

لا يوجد دليلٌ على أنَّ تناول مكملات هذا الفيتامين سوف يُؤدّي إلى إبطاء تراجع قدرات الدماغ، حيث بيّنت دراستنا مُجرّد ارتباط بين الأمرين؛ وبذلك سيكون جُلّ ما نستطيع قوله هو أنَّ مكملات فيتامين د قد تنفع الإنسان، وإنّ التأثيرات السلبية بسيطة جداً".

تتصح المعاهدُ القومية الأمريكية للصحة بأن يتراوح المدخول اليومي لفيتامين د عند البالغين من كبار السنّ بين ٦٠٠ إلى ٨٠٠ وحدة دولية؛ ويُسمّى هذا الفيتامين بفيتامين ضوء الشمس، وهو يوجد في الأطعمة المدعمة مثل الحليب وعصير البرتقال والحبوب والزيادي، كما يحتوي السمك وبيض البيض والكبد على هذا الفيتامين.

قال الدكتور سام غاندي، مديرُ قسم الصحة المعرفية لدى مستشفى ماونت سيناي في نيويورك: "يجب تفحصُ مستويات فيتامين د لمرة واحدة على الأقل عند الأشخاص في عُمر ٥٥ عاماً وأكبر، ويجب أن يكونَ هذا الأمر جزءاً من أي تقييمٍ لضعف قدرات الدماغ؛ ولكن لا يعني هذا ضرورة تناول مكملات فيتامين د بشكلٍ روتيني".

اكتشاف علاقة بين تناول أدوية شائعة للسكري وانخفاض خطر الإصابة بداء باركنسون

21-Jul-2015

بيّنت دراسة حديثة أنَّ زُمرة من أدوية السّكري شائعة الاستخدام، مثل أكتوس Actos وأفانديا Avandia، قد تُساعد على وقاية مُستخدميها من مرض باركنسون (الشّلل الرعاش).

اشتملت الدراسة على حوالي ٤٤٦٠٠ مريضٍ بالسّكري في بريطانيا، تناولوا ما يُسمّى أدوية الغليتازون Glitazone Drugs، حيثُ الاسمُ الشائع لدواء أفانديا هو روزيغليتازون Rosiglitazone، بينما الاسم الشائع لدواء أكتوس هو بيوغليتازون Pioglitazone .

قارنَ الباحثون بين السجلات الطبية لهؤلاء المرضى وسجلات أكثر من ١٢٠ ألف مريضٍ بالسّكري لم يتناولوا أدوية الغليتازون؛ ورصدوا تلك السجلات ابتداءً من العام ١٩٩٩، وهو العام الذي طُرحت فيه تلك الأدوية في الأسواق كعلاجٍ للسّكري، إلى غاية العام ٢٠١٣.

وجدَ الباحثون أنَّه، خلال تلك الفترة، كان المرضى الذين استخدموا أدوية الغليتازون أقلّ ميلاً بنسبة ٢٨ في المائة لأن تُشخص إصابتهُم بمرض باركنسون، بالمُقارنة مع الذين لم يتناولوا أي نوع من تلك الأدوية؛ وبقي الارتباط بين استخدام هذه الأدوية وانخفاض خطر مرض باركنسون موجوداً، حتّى بعد أن أخذ الباحثون في الاعتبار العوامل التي تُنذرُ بهذا المرض، مثل التدخين وإصابات الرأس.

ولكن، عندما تفحصَ الباحثون وبشكلٍ مُنفصل حالات المرضى الذين استخدموا أدوية الغليتازون في الماضي والمرضى الذين استخدموها مؤخراً، وجدوا أنَّ انخفاض خطر الإصابة بمرض باركنسون شوهد فقط عند المرضى الذين استخدموا تلك الأدوية مؤخراً (انخفض الخطر بنسبة ٤١ في المائة)؛ ولم ينخفض هذا الخطر عند المرضى الذين استخدموا تلك الأدوية من قبل، ولكنهم توقّفوا عن استخدامها أو انتقلوا إلى استخدام زمرة دوائية أخرى لمرض السّكري.

قالت المُشرفة على فريق الباحثين الدكتورة روث براور، من كلية لندن للصحة والطب المداري: "تشير هذه النتائجُ إلى أنَّ أية منفعة تختفي حالما يتوقّف المريض عن تناول الأدوية".

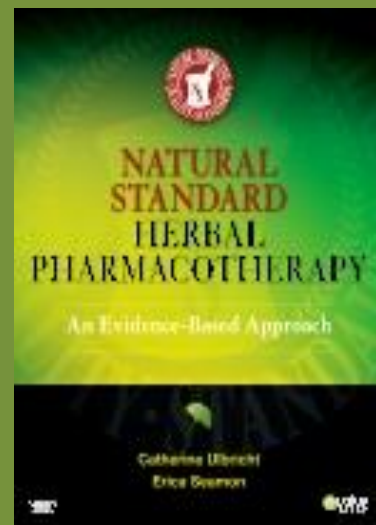
لم تُبرهن الدراسة على علاقة سبب ونتيجة بين أدوية الغليتازون وانخفاض خطر الإصابة بمرض باركنسون، ولكن قال الباحثون إنَّ النتائج تدعم ما توصّلت إليه دراسات سابقة حول أنَّ تلك الأدوية قد تُساعد على وقاية الدماغ.

المصدر: موسوعة الملك عبد الله بن عبد العزيز العربية للمحتوى الصحي .

Scientific Books: New Release

Natural Standard Herbal Pharmacotherapy By Catherine Ulbricht, PharmD

Kaplan Test Prep is the only PCAT prep provider to be endorsed as the official providers of PCAT prep by the American Association of Colleges of Pharmacy (AACP). **Natural Standard Herbal Pharmacotherapy** provides practical guidance on the use of herbal therapies for medical conditions. The text's unique expanded outline format allows you to quickly review facts and identify important information. Each chapter includes detailed, evidence-based coverage of the effects of herbal medicine on medical conditions, and Natural Standard's grading scale ensures you use the most effective treatments for your patients. Plus, a section on adjunct therapies provides advice on combining herbal medicine with primary treatments.



If you want to receive the DPIC bulletin in your E-mail please contact us via: malarifi@ksu.edu.sa

Upcoming Conferences

- ❖ 2nd - 3rd November 2015 CNS Clinical Trial Summit at the Hyatt Regency Bethesda in Bethesda, United States.
- ❖ 2nd - 4th November 2015 3rd International Conference on Hematology & Blood Disorders at the 1031 Virginia Ave, Atlanta, GA 30354, United States in Atlanta, GA, United States.
- ❖ 2nd - 4th November 2015 Pharma Middle East at the Dubai in Dubai, United Arab Emirates.
- ❖ 4th - 5th November, 2015. Essentials and Overview of the Regulatory Framework in Europe at the Mercure Paris Porte, France.
- ❖ 3rd - 5th November 2015 8th Euro Global Diabetes Summit and Medicare Expo at the Spain in Valencia.

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Address / Correspondence: Drug & Poison Information Center, College of Pharmacy, King Saud University. P.O. Box 2457 Riyadh 11451, Saudi Arabia. Tel: 4677352, 4677353, 4677354 Fax: 4676229
E-mail: malarifi@ksu.edu.sa