

Newsletter

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Recent Updates in the Medical Industry

Science and technology are contributing to the medical industry in a big way. Many unthinkable innovations have become part of disease diagnostics and prognostics process. Medical practitioners and doctors themselves have access to vast information and tools that help them prescribe the right medication for patients. This transformation in medicine is definitely making patient's life healthier and improving patient care.

Introduction

A lot of innovations are happening in the medical industry. Researchers and engineers have joined hands to create some of the most path breaking solutions. This has improved the efficiency and quality of the current healthcare systems. This article has tried to compile few of these milestones in next few paragraphs.

Ketamine for treatment-resistant depression

Stress in humans has been ever increasing nowadays in this competitive world. About 13 million Americans go into a depression every year. Antidepressants are not able to cure about 30% of them. This puts them at a risk of becoming alcoholic, drug-addicts or suicidal. Researchers have shown that ketamine, the anesthetic drug, can be used to cure depression. First studies done in 2013 showed that ketamine can inhibit the

action of N-Methyl-D-aspartate receptors in the nerve cells. About 70% of patients showed signs of improvement in depression with this drug. These studies made FDA give a green signal for developing medications for targeting NMDA receptors. Ketamine is a life savior for severely depressed patients. Researchers are working towards understanding ketamine's potential and trying to make it a long-term treatment for depression.

Using the human microbiome to prevent, diagnose and treat disease

Microbes are microscopic organisms that reside in the human body. These microbes range from bacteria to fungi to viruses etc. they interact with the human body and the chemicals these microbes



Microbes in Human Body

emit, interact with digestion and a disease progression. They can sense pathogens in the body and identify the inflammatory state of the gut. Containing more than hundred genetic circuits, their response can help identify external activity within the human body. These smart microbes can be colonized and can be used to identify specific disease conditions like cancer, diarrhea etc. and help guide our immune system to fight against diseases. In near future scientists will be able to implant genetically improved microbes in the human body to improve its health.

Liquid biopsies to find circulating tumor DNA

Liquid Biopsy or fluid biopsy is the process where non-solid tissue like blood, is analyzed to find diseases. It is mostly used as a diagnostic or a monitoring tool for diseases like cancer. This non-invasive technique can also help diagnose the cell-free tumor, as this tumor is easy to be detected in blood rather than tumor tissue. This technology of detecting diseases was discovered when researchers found that cancer mutations can be detected in DNA in the blood. Any type of tumor free-circulating DNA present in blood can be easily diagnosed. Even though this technique is approved by the FDA, it's used is only limited in detecting the tumor (ctDNA) and heart diagnostics (CECs).

Bioabsorbable stents

Coronary artery blocking is a common health hazard being faced by people today. To prevent blocking of arteries, stents are implanted in blood vessels to



ABSORB Stent – by Abbott

expand them. Generally, stents are made from metal mesh. They are either implanted in the body permanently or

removed after a surgery. Bioabsorbable stents, on the other hand, are made of materials like polymers, that dissolve in the body. These polymer stents breakdown over a period of time, about two years, into lactic acid that can be used by the body in metabolism. These stents have already been approved in the US for use. Researchers say that bioabsorbable stents will reach a market of \$2 billion in next few years.

Diabetes Drugs to Reduce Cardiovascular Disease

Diabetes is one of the leading causes of deaths in the world. It brings along the risk of cardiovascular diseases and kidney issues. Few antibiotic drugs for diabetes have shown to have reduced cardiovascular disease in patients with type-2 diabetes. The drug Empagliflozin has been effective in reducing kidney issues in patients having type-2 diabetes. Some cardiologists have also started prescribing these antibiotics that benefit the patients in a big way. This is one effective way to treat diabetic patients.

CONCLUSION

All these advancements in medicine are increasing at an exponential pace and becoming a strong support system for doctors and hospitals. Such steady progress towards technological innovation will improve the quality of healthcare systems and people will enjoy longer lives.

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