Newsletter

Dated 17.07.2017

Recent Updates in the Medical Industry

In this modern era, the technology advancements are happening at an exponential rate. The engineers and researchers continue to develop new ideas and technologies for improving the human health. Even healthcare start-ups are coming up to bridge the gap between the doctors and patients. A whole new wave of innovation backed by technology has flooded the medical sector with necessary assistance to improve human health. This amalgamation of medical science and technology is indeed helping this industry to reach new heights in disease diagnostics and prognostics.

INTRODUCTION

All the high-end technology that we see in movies is now turning into a reality. Medical sciences have come a long way in curing human health with the help of modern technologies. Interdisciplinary interactions in science domain have led to a revolution in the medical industry.

CAR T-CELL IMMUNOTHERAPIES

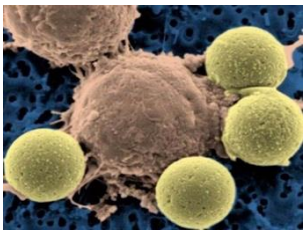
Cancer has been treated with surgery, chemotherapy or radiation therapy for quite some time now. But now immunotherapy, therapies that use a patient's immune system's strength to fight their diseases, is being applied to cancer cure. In this cellular immunotherapy, a patient's T-cells, a type of white blood cells are extracted and treated in the lab where chimeric antigen receptor is added to these cells. Then the cells are injected back into patient's body to fight cancer cells. It was first tested on a young girl suffering from an aggressive form of ALL. After a successful result, a lot of clinical trials have started to improve this cancer cure therapy.

FOOD SCANNERS

TellSpec Food Scanner

Healthy eating is important to remain fit. Life has become so busy nowadays that people prefer to eat outside more often. Moreover, people also suffer from food allergies, so its good to know what ingredients go into the food that you are eating. Few companies like TellSpec and others have designs food scanners that give detailed information about the food that you are about to eat. These are small hand-held devices that have to be pointed towards the food to identify what they are made of. Not only does this device list down the allergens and ingredients in the food but also display the vitamins and calories you would be eating. Keeping track of calories is a bonus with these devices. The device has shown an accuracy of 97.7 percent in scanning food items.

3D BIOPRINTING



An engineered CAR T cell

3D printing is one of the most amazing inventions of the 21st century. Recent advances in technology have made possible printing of biocompatible materials into 3d functional living cells. This helps with the increasing demand of tissue and organ transplant. Amalgamation of scientific fields like engineering, biomaterials, physics, cell biology and medicine has helped address complexities in 3D Bioprinting. Doctors have already started using this technology for generating several tissues like vascular grafts, heart

tissue, bones and cartilaginous structures. Even medical labs have started using 3D-bioprinted tissues for research and drug applications.

SYNTHETIC BLOOD

A blood substitute is an artificially created substance to mimic functions of biological blood. This would provide an alternative to blood transfusion. A substitute for red blood cells, these are designed to transport oxygen and carbon dioxide in the human body. It is produced by chemical isolation or biochemical technology. People with rarer blood types will be major beneficiaries of this technology. Stem cells are also being looked upon as an alternate source of human blood, as they produce blood cells with the same haemoglobin content as native blood cells. Research towards creating an ideal blood substitute is still continuing.

BIONIC EYE

A device that helps to restore the patient's vision suffering from complete or partial sightlessness. This vision system consists of a pair of eye-glasses to which a camera is attached. The radio signals, high-frequency in nature, are then transmitted to the microchip which is implanted in eye. On receiving these signals, the electrodes convert them into electric impulses for stimulating the retina. The retina then passes these signals to the optic nerve connected to the visual cortex in the brain and the human is able to visualize the image. This technology addresses the medical conditions like retinitis pigmentos and macular degeneration which comes with age.

CONCLUSION

All these latest technologies are creating path breaking milestones in medical history. These are acting as support systems to help doctors be proactive in disease diagnosis. A healthy future is right around the corner.

By,

Shailja Daga

REFERENCES

CAR T-cells - https://www.cancer.gov/about-cancer/treatment/research/car-t-cells

Food scanners - http://medicalfuturist.com/food-scanners/

3D-Bioprinting - https://en.wikipedia.org/wiki/3D_bioprinting

Bionic Eye - http://bionicvision.org.au/eye