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Editorial

Dear Colleagues

Gene therapy is penetrating the clinical practice for various medical disorders. Recently, FDA approved the First Gene Therapy for Adults with *Severe Hemophilia A*. *Roctavian,* an adeno-associated virus vector-based gene therapy for the treatment of adults with severe haemophilia A. There is a glimpse of hope for children with *Duchenne muscular dystrophy (DMD)*. The FDA has approved the first gene therapy *(Elevidys)* for the treatment of pediatric patients 4 through 5 years of age with a confirmed mutation in the DMD gene who do not have a pre-existing medical reason preventing treatment with this therapy.

The incidence of *Diabetes Mellitus* is on the rise across the globe especially in low-middle-income countries like India and other South Asian countries. FDA has approved the first Cellular Therapy to Treat Patients with *Type 1 Diabetes (T1D*). *Lantidra* is the first allogeneic (donor) pancreatic islet cellular therapy made from deceased donor pancreatic cells for the treatment of type 1 diabetes. *Lantidra* is approved for the treatment of adults with T1D who are unable to approach target glycated haemoglobin (average blood glucose levels) because of current repeated episodes of severe hypoglycemia (low blood sugar) despite intensive diabetes management and education. *Jardiance (Empagliflozin) and Synjardy (Empagliflozin and Metformin hydrochloride)* as additions to diet and exercise are the newer drugs for *type 2 Diabetes (T2D)*. They improve blood sugar control in children 10 years and older with type 2 diabetes and provide a new class of medicines taken by mouth to treat pediatric T2D. The newer device called *iLet Bionic Pancreas* is now approved for use by T1D patients. The system can be paired with a Bluetooth glucose monitor to deliver personalized insulin dosing every five minutes and calculates doses based on past and current glucose levels and its experience of how the user reacted to previous insulin doses.

Recent research has shown promising results of *Mirikizumab* as an induction and maintenance therapy for *Ulcerative Colitis*. Biologic therapies are now used for patients with *chronic obstructive pulmonary disease (COPD)* and evidence of eosinophilic inflammation who continue to have frequent exacerbations despite optimized standard therapy. Patients with COPD, chronic bronchitis, and peripheral eosinophilia, with recurrent moderate to severe exacerbations despite optimal inhaled therapy. *Dupilumab* given subcutaneously every two weeks demonstrated modest reductions in exacerbations and improvements in pulmonary function at one year compared with those assigned to placebo. *Advanced cholangiocarcinoma* is an aggressive disease with poor survival outcomes. The addition of *Pembrolizumab* to *Gemcitabine plus Cisplatin* has demonstrated an improved overall survival (median 13 versus 11 months) with an acceptable toxicity profile.

New treatment guidelines have been published on *Radiofrequency denervation* for *osteoarthritic knee* pain, *Botulinum toxin* type A injections into the urethral sphincter for *idiopathic chronic non-obstructive urinary retention, management of nonalcohol-associated fatty liver disease (NAFLD)*.

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I. Drugs

FDA Approves First Gene Therapy for Adults with Severe Hemophilia A
Source: The FDA, June 2023
Link: https://www.fda.gov/news-events/press-announcements/fda-approves-first-gene-therapy-adults-severe-hemophilia

Roctavian, an adeno-associated virus vector-based gene therapy for the treatment of adults with severe hemophilia A without pre-existing antibodies to adeno-associated virus serotype 5 detected.

FDA Approves First Cellular Therapy to Treat Patients with Type 1 Diabetes
Source: The FDA, June 2023
Link: https://www.fda.gov/news-events/press-announcements/fda-approves-first-cellular-therapy-treat-patients-type-1-diabetes

Lantidra, the first allogeneic (donor) pancreatic islet cellular therapy made from deceased donor pancreatic cells for the treatment of type 1 diabetes. Lantidra is approved for the treatment of adults with type 1 diabetes who are unable to approach target glycated hemoglobin (average blood glucose levels) because of current repeated episodes of severe hypoglycemia (low blood sugar) despite intensive diabetes management and education.

FDA Approves First Gene Therapy for Treatment of Certain Patients with Duchenne Muscular Dystrophy
Source: The FDA, June 2023
Link: https://www.fda.gov/news-events/press-announcements/fda-approves-first-gene-therapy-treatment-certain-patients-duchenne-muscular-dystrophy

Elevidys, the first gene therapy for the treatment of pediatric patients 4 through 5 years of age with Duchenne muscular dystrophy (DMD) with a confirmed mutation in the DMD gene who do not have a pre-existing medical reason preventing treatment with this therapy.

FDA Approves New Class of Medicines to Treat Pediatric Type 2 Diabetes
Source: The FDA, June 2023
Link: https://www.fda.gov/news-events/press-announcements/fda-approves-new-class-medicines-treat-pediatric-type-2-diabetes

Jardiance (empagliflozin) and Synjardy (empagliflozin and metformin hydrochloride) as additions to diet and exercise to improve blood sugar control in children 10 years and older with type 2 diabetes. Provide a new class of medicines taken by mouth to treat pediatric type 2 diabetes. Metformin, the only other oral therapy available for the treatment of children with type 2 diabetes.

FDA Grants Full Approval to Paxlovid, COVID-19 Antiviral Treatment
Source: The JAMA, June 2023
Link: https://jamanetwork.com/journals/jama/fullarticle/2806030

Acombination of oral nirmatrelvir and ritonavir for managing mild to moderate COVID-19 infections in adults who are at high risk of developing severe disease.

II. Clinical Research

Mirikizumab as Induction and Maintenance Therapy for Ulcerative Colitis
Source: The NEJM, June 2023
Link: https://www.nejm.org/doi/full/10.1056/NEJMoa2207940

Mirikizumab was more effective than placebo in inducing and maintaining clinical remission in patients with moderately to severely active ulcerative colitis. Opportunistic infection or cancer occurred in a small number of patients treated with mirikizumab.

Dupilumab for refractory chronic obstructive pulmonary disease
Source: The Uptodate, June 2023
Link: https://www.uptodate.com/contents/whats-new-in-allergy-and-immunology
https://www.uptodate.com/contents/management-of-refractory-chronic-obstructive-pulmonary-disease?sectionName=Frequent%20exacerbations%20despite%20azithromycin%20or%20roflumilast&topicRef=8363&anchor=H2074538269&source=see_link#H2074538269

Biologic therapies have been proposed for patients with chronic obstructive pulmonary disease (COPD) and evidence of eosinophilic inflammation who continue to have frequent exacerbations despite optimized standard therapy. Patients with COPD, chronic bronchitis, and peripheral eosinophilia, with recurrent moderate to severe exacerbations despite optimal inhaled therapy, individuals assigned to receive dupilumab subcutaneously every two weeks demonstrated modest reductions in exacerbations and improvements in pulmonary function at one year compared with those assigned to placebo.

Gemcitabine plus cisplatin and pembrolizumab for advanced cholangiocarcinoma
Source: The Uptodate, June 2023
Link: https://www.uptodate.com/contents/whats-new-in-oncology
https://www.uptodate.com/contents/systemic-therapy-for-advanced-cholangiocarcinoma?sectionName=Gemcitabine%20plus%20cisplatin%20and%20pembrolizumab&topicRef=8361&anchor=H3275727965&source=see_link#H3275727965

Advanced cholangiocarcinoma is an aggressive disease with poor survival outcomes, so there is interest in investigating novel approaches such as the addition of immunotherapy to chemotherapy. Patients with treatment-naïve, locally advanced or metastatic biliary tract cancers, the addition of pembrolizumab to gemcitabine plus cisplatin improved overall survival (median 13 versus 11 months) with an acceptable toxicity profile. Gemcitabine plus cisplatin and pembrolizumab to be an appropriate initial treatment option in fit patients with advanced or metastatic cholangiocarcinoma and no hyperbilirubinemia.

III. Devices

iLet Bionic Pancreas Cleared by FDA
Source: The Medgadget, June 2023
Link: https://www.medgadget.com/2023/06/ilet-bionic-pancreas-cleared-by-fda.html

The iLet Bionic Pancreas for use by type 1 diabetes patients. The system can be paired with a Bluetooth glucose monitor to deliver personalized insulin dosing every five minutes, and calculates doses based on past and current glucose levels and its experience of how the user reacted to previous insulin doses. The technology has a personal origin story, as one of the researchers drove its development based on his experiences caring for his son with type 1 diabetes.

IV. Treatment Guidelines

Botulinum toxin type A injections into the urethral sphincter for idiopathic chronic non-obstructive urinary retention
Source: The NICE, June 2023
Link: https://www.nice.org.uk/guidance/ipg766

People with idiopathic chronic non-obstructive urinary retention caused by external urethral sphincter dysfunction (also known as Fowler's syndrome in younger women and people with female anatomy, primary disorder of urethral sphincter relaxation or high-tone non-relaxing urethral sphincter), botulinum toxin type A injections into the urethral sphincter should only be used with special arrangements for clinical governance, consent, and audit or research

Radiofrequency denervation for osteoarthritic knee pain
Source: The NICE, June 2023
Link: https://www.nice.org.uk/guidance/ipg767

Radiofrequency denervation for osteoarthritic knee pain. This involves applying heat (radiofrequency) energy to damage the nerves (denervation) that are causing pain in the knee.

Endoscopic ultrasound-guided gallbladder drainage for acute cholecystitis when surgery is not an option
Source: The NICE, June 2023
Link: https://www.nice.org.uk/guidance/ipg764

Endoscopic ultrasound-guided gallbladder drainage for acute cholecystitis when surgery is not an option. This involves inserting a stent through an endoscope into the gallbladder.

Minimally invasive fusionless posterior-approach surgery to correct idiopathic scoliosis in children and young people
Source: The NICE, June 2023
Link: https://www.nice.org.uk/guidance/ipg765

Minimally invasive fusionless posterior-approach surgery to correct idiopathic scoliosis in children and young people. This involves inserting a rod along the spine through a small cut in the back.

Updated guidance on management of nonalcohol-associated fatty liver disease
Source: The Uptodate, June 2023
Link: https://www.uptodate.com/contents/whats-new-in-gastroenterology-and-hepatology
https://www.uptodate.com/contents/management-of-nonalcoholic-fatty-liver-disease-in-adults?sectionName=INTRODUCTION&topicRef=8351&anchor=H1&source=see_link#H1

The American Association for the Study of Liver Diseases (AASLD) has published updated guidance on the management of nonalcohol-associated fatty liver disease (NAFLD). The guidance endorses dietary modification and physical activity for patients who are overweight or obese, with consideration for subsequent interventions for those who do not achieve weight loss goals with lifestyle modification. AASLD emphasizes optimizing glucose control for patients with diabetes, lipid-lowering therapy for patients with hyperlipidemia, and abstinence from alcohol for patients with clinically significant hepatic fibrosis.

V. Healthcare Administration

Reduction of Intravenous Antihypertensives through Clinical Decision Support in a Large Safety Net System
Source: The JCI, June 2023
Link: https://www.jointcommissionjournal.com/article/S1553-7250(23)00061-2/fulltext

Asymptomatic severe hypertension (also known as hypertensive urgency) is frequently encountered in the hospital. Previous evidence suggests that management with one-time doses of intravenous (IV)

antihypertensives may increase adverse events. Despite this, single-dose treatment remains common in the emergency department and inpatient settings.