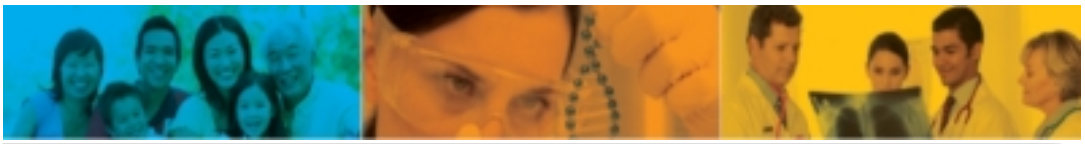

Clinical Research Newsletter Volume - 6, June 2015

LAMBDA

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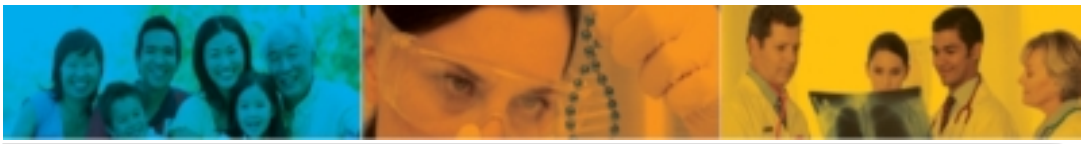


LAMBDA

GLOBAL NEWS

1.1. Eli Lilly to Build Drug Delivery Innovation Center May 06, 2015

- Eli Lilly and Company has announced plans to establish a new drug delivery and device innovation centre in Cambridge, Massachusetts - a strategic location that will help attract top scientists and bioengineers, as well as enhance Lilly's local business development presence. The Lilly Cambridge Innovation Center, a maker space located in Kendall Square, will allow leading life science experts and organizations to explore how emerging technologies and connectivity can advance drug delivery and device innovation to improve patient health.

1.2. FDA issues ketoacidosis warning for SGLT2 inhibitors May 15, 2015

- The FDA issued a warning Friday that SGLT2 inhibitors, which include AstraZeneca's Farxiga (dapagliflozin), Johnson & Johnson's Invokana (canagliflozin), and Eli Lilly and Boehringer Ingelheim's Jardiance (empagliflozin), may lead to ketoacidosis. According to the FDA, its adverse events database identified 20 cases of acidosis, reported as diabetic ketoacidosis (DKA), ketoacidosis or ketosis, in patients treated with SGLT2 inhibitors from March 2013 to June 6, 2014. The agency indicated that its warning also covers combination drugs containing SGLT2 inhibitors, including Johnson & Johnson's Invokamet (canagliflozin/metformin), AstraZeneca's Xigduo XR (dapagliflozin/metformin) and Eli Lilly and Boehringer's Glyxambi(empagliflozin/linagliptin).

1.3. New Indian Drug Saroglitazar Targets 'Diabetic Dyslipidemia' May 15, 2015

- A novel glucose- and lipid-lowering drug, a dual peroxisome proliferators-activated receptor (PPAR) alpha/gamma agonist called saroglitazar that is currently available only in India demonstrated efficacy and safety in a 9-month multicenter post marketing study. The findings were presented at the American Association of Clinical Endocrinologists' 2015 Annual Scientific and Clinical Congress by Shashank R Joshi, MD, an endocrinologist who practices at several hospitals in India and is president of the Indian Academy of Diabetes and president-elect of the Endocrine Society of India. In the study reported by Dr Joshi, 787 patients with "diabetic dyslipidemia" were prescribed saroglitazar at the approved 4-mg once-daily dose, by 54 consultant endocrinologists in India. At 9 months, triglycerides were reduced by 44% (from 298 mg/dL at baseline to 156 mg/dL) and non-HDL cholesterol dropped by 30% (199 mg/dL to 132 mg/dL), both significant ($P < .0001$).

DOMESTIC NEWS

2.1. India to be part of first clinical study using stem cells to cure spinal cord injury May 09,2015

India will soon become a part of a first-of-its-kind clinical trial for treating spinal cord injury in humans through stem-cells involving 18 patients. The clinical trial is a part of a collaborative study conducted in China, Norway and America involving 240 patients led by China based stem cell researcher Dr Wise Young. The pre-clinical trial of this project already completed in the US and also the first phase clinical trials in China involving 120 patients. The phase -2 b trials on humans in India will now begin with 6 patients each from Bombay Hospital, Mumbai, NeuroGen Brain and Spine Institute, Mumbai and Apollo Hospital, Chennai.

2.2. Gujarat launches India's first mobile drug testing lab with an investment of Rs. 1 cr May 11, 2015

- The much anticipated mobile drug testing lab was launched this month by the Gujarat health ministry, making it the first state in the country to possess such a high tech on the go-spot-detecting drug testing laboratory. The state government has made a total investment Rs. 1 crore from the funds allocated to the Gujarat Food and Drug Control Administration (FDCA) for this purpose. This mobile drug testing lab has an in built library consisting of resources of up to 1000 molecules of pharmaceutical APIs as accepted under the Indian Pharmacopoeia (IP), United States Pharmacopoeia (USP) and British Pharmacopoeia (BP) standards.

2.3. Metropolis Healthcare reports 21.8% tested positive for ovarian cancer in last two years.

May 11, 2015

- Ovarian cancer has emerged as one of the most common cancer affecting women in India. An analysis of samples collected over the past two years (2013-2014) by Metropolis Healthcare Ltd reveals that a total of 7945 tested positive for high CA125 levels out of the 36,515 samples processed at Metropolis Healthcare in Mumbai. According to Indian Journal of Cancer, 1 out of 5 women are prone to ovarian cancer. The majority of ovarian cancers arise from the epithelium (outer lining) of the ovary. 9 out of 10 ovarian cancers are epithelial ovarian cancers.

2.4. Troikaa receives national award for commercialisation of indigenous technology May 21, 2015

- Troikaa Pharmaceuticals limited, an Ahmedabad based Pharmaceuticals Company, received the national award from Technology Development Board, Department of Science and Technology, Government of India for successful commercialisation of an indigenous technology. The award was given to Troikaa's novel technology for topical drug delivery which is commercialised under the brand name Dynapar QPS which provides quick and comprehensive penetration of the drug through the skin and has brought the paradigm shift in the musculoskeletal pain segment.

REGULATORY NEWS

3.1. Clinical data may not be needed for topical comparisons: EMA May 13, 2015

- EMA is developing guidelines on alternative ways for topical medicine makers to prove the comparability of their drugs with innovator products.EMA may waive therapeutic equivalence for solutions such as eye drops, nasal spray and cutaneous solutions, which can be extended to other dosage forms if they can show pharmaceutical equivalence combined with another type of equivalence(in vitro or in vivo).The public has 3 months to comment on the EMA's concept paper before the agency's quality working party prepares draft guidelines on topical.

3.2. Health Ministry recommends post-trial access of NCE to trial participants — May 13, 2015

- In order to permit expanded access to an investigational drug for treatment of a patient, the Union health ministry has recommended that in case a New Chemical Entity (NCE) is found to be beneficial in clinical trial, the trial participants should have post-trial access to such NCE on the basis of recommendations of the investigator and ethics committee. This is especially in the cases where no alternative therapy is available to the patient.

3.3. Latest Regulations on Pharmaceutical International Multi-Center Clinical Trials in China

May 22, 2015

- Chinese pharmaceutical authorities officially issued guidance on international multi-centre clinical trials of drugs in China, which has begun to be implemented on March 1, 2015. The guidance provides an opportunity to reduce risk from the examination uncertainty and approval delays to eat up time and energy to achieve a successful entry into such a lucrative drug market, and to avoid trouble for business smoothly in China. The overseas and multinational pharmaceutical manufacturers must be compliance with the latest regulations.

DRUG APPROVALS AND LAUNCHES

4.1. TGA approves Akynzeo (FDC of Netupitant and Palonosetron) to prevent CINV — May 11, 2015

- Specialised Therapeutics Australia (STA), an Australian biopharmaceutical company and Helsinn, a Swiss group focused on building quality cancer care, announce that the Therapeutic Goods Administration (TGA) has approved Akynzeo for the prevention of acute and delayed nausea and vomiting associated with initial and repeat courses of moderately and highly emetogenic cancer chemotherapy. Akynzeo is the first approved fixed dose combination oral agent that targets two critical signalling pathways associated with CINV by combining netupitant, an NK1 receptor antagonist, and palonosetron, a 5-HT3 receptor antagonist, in a single capsule for the prevention of CINV

4.2. FDA Approves First Spray-Dried Biologic Raplixa — May 15, 2015

- FDA approved a novel biologic for the control of mild to moderate bleeding in adults during surgery, developed by ProFibrix BV and manufactured through Nova Laboratories' aseptic spray-drying technique. The drug, Raplixa, is a blend of spray-dried thrombin and fibrinogen that is mixed and filled aseptically. Raplixa may have advantages over other fibrin sealants on the market, as it does not require cold-chain transportation and has no special storage requirements related to temperature. Raplixa was tested in a Phase III clinical study involving 719 participants in four countries during a period of 11 months in a variety of different surgical procedures. When compared to an absorbable gelatin sponge alone to control bleeding, Raplixa, in combination with a sponge, was shown to be more effective for the formation of blood clots.

4.3. Actavis introduces Namzaric in US market to treat Alzheimer's disease May 19, 2015

- Actavis plc has introduced Namzaric (memantine hydrochloride extended-release and donepezil hydrochloride), a once-daily, fixed-dose combination of memantine hydrochloride extended-release (a NMDA receptor antagonist), and donepezil hydrochloride (an acetyl cholinesterase inhibitor), is now available to patients and healthcare professionals across the United States. Namzaric was approved by the US Food and Drug Administration (FDA) in December for the treatment of moderate to severe Alzheimer's disease in patients stabilized on memantine hydrochloride and donepezil hydrochloride.

4.4. FDA OKs 3-Month Paliperidone Injection for Schizophrenia May 19, 2015

- The US Food and Drug Administration (FDA) has approved a quarterly injection form of paliperidone (Invega Trinza, Janssen Pharmaceuticals) for schizophrenia as per the company announcement. Janssen Pharmaceuticals already markets a once-a-day tablet version of paliperidone (Invega) as well as a monthly intramuscular injection version (Invega Sustenna) for schizophrenia. The new drug provides the longest dosing interval available for patients with schizophrenia, enabling them to focus more on their overall recovery and less on taking their medication regularly.

DRUGS IN DEVELOPMENT AND CLINICAL TRIALS

5.1. Roche announces positive results from pivotal studies of alectinib in advanced ALK+ NSCLC

May 15, 2015

- Roche announced positive results from two pivotal studies (NP28673 and NP28761) that showed alectinib, its oral investigational anaplastic lymphoma kinase inhibitor (ALKi), shrank tumours (overall response rate; ORR: 50% and 47.8%, respectively) in people with advanced ALK-positive (ALK+) non-small cell lung cancer (NSCLC) whose disease had progressed following treatment with crizotinib. In addition, alectinib was shown to shrink tumours in people whose cancer had spread to the central nervous system (CNS). Additionally, people whose tumours shrank in response to alectinib continued to respond for a median of 11.2 and 7.5 months, respectively.

5.2. Intercept Pharmaceuticals Announces Pivotal Phase 3 Clinical Trial of Obeticholic Acid in NASH

May 19, 2015

- Intercept Pharmaceuticals, Inc.(New York) announced its plans for an international Phase 3 trial of obeticholic acid (OCA), the company's lead FXR agonist, in patients with non-cirrhotic non-alcoholic steatohepatitis (NASH) with liver fibrosis. OCA has received breakthrough therapy designation in this patient population from the U.S. Food and Drug Administration (FDA). The Randomized Global Phase 3 Trial to Evaluate the Impact on NASH with Fibrosis of Obeticholic Acid Treatment (REGENERATE) has been designed as a double-blind, placebo-controlled pivotal Phase 3 clinical trial expected to enrol up to approximately 2,500 patients and assess the potential benefit of OCA treatment on liver-related clinical outcomes.

5.3. D-Pharm announces positive phase 2 study results of THR-18 in acute stroke patients

May 16, 2015

- D-Pharm Ltd., a clinical stage, technology-driven biopharmaceutical company developing proprietary products for treatment of CNS disorders, has received the final report for its phase 2 clinical study of THR-18. THR-18 is a novel drug-candidate designed to neutralize or reduce the life-threatening adverse effects of thrombolytic therapy with tPA. This double-blind, placebo-controlled, escalating single-dose, Phase 2 study was the first to assess the safety, pharmacodynamics and pharmacokinetics of THR-18 and tPA in AIS patients.

5.4. TB Alliance begins clinical trial of new regimen to treat extensively drug-resistant tuberculosis

May 16, 2015

- TB Alliance and its partners have announced the start of a clinical trial of a new regimen to treat extensively drug-resistant tuberculosis (XDR-TB.) It is the first study to test an all-oral drug regimen (Nix-TB), comprised of drugs with minimal pre-existing resistance, that has the potential to shorten, simplify, and improve treatment for XDR-TB. The three drugs that comprise the treatment being tested in Nix-TB have novel mechanisms of action. The three-drug regimen consists of bedaquiline (B), which received conditional regulatory approval in several high-TB disease burden countries; the novel antibacterial drug compound pretomanid (Pa), which is being tested in multiple clinical trials; and linezolid, an oxazolidinone, which has been used off-label to treat TB.

5.5. CytRx Reports Positive Updated Phase 2 Aldoxorubicin Clinical Trial Results in Glioblastoma Multiforme (Brain Cancer)

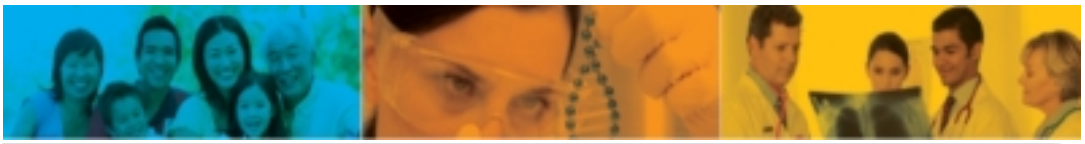
May 21, 2015

- CytRx Corporation, a biopharmaceutical research and development company specializing in oncology has announced positive updated results from its ongoing Phase 2 clinical trial with aldoxorubicin for the treatment of unresectable glioblastoma multiforme (GBM), a deadly form of brain cancer. The open-label, multisite trial is designed to investigate the preliminary efficacy and safety of aldoxorubicin in patients whose tumours have progressed following prior treatment with surgery, radiation and temozolomide.

5.6. No evidence on adverse events from biosimilar switches: Finnish medicines agency

May 27, 2015

- According to the latest statement on biosimilars from Finnish medicines agency, there is no evidence for adverse effects due to switch from a reference product to an approved biosimilar and the "theoretical basis of such adverse effects is weak". Fimea defines interchangeability as "the medical practice of changing one medicine for another that is expected to achieve the same clinical effect in a given clinical setting", but "does not deal with substitution at the pharmacy level".



MERGER/ACQUISITIONS/COLLABORATION

6.1. Immune Pharmaceuticals and STC Biologics tie up to accelerate NanomAbs® development

May 04, 2015

- Immune Pharmaceuticals Inc., a clinical stage bio-pharmaceutical company with a monoclonal antibody, bertilimumab, for the treatment of auto-immune diseases, and STC Biologics, a biotechnology development company led by alumni of Genentech, Shire, Novartis and Merrimack Pharmaceuticals, announced that they are entering into a strategic partnership to accelerate the development of NanomAbs, a new generation of Antibody Nanoparticle Conjugates allowing the targeted delivery of chemo-therapeutics.

6.2. ANI Acquires Rights to Testosterone Gel 1% May 13, 2015

- ANI Pharmaceuticals, Inc. announced that it has acquired the approved new drug application for a testosterone gel 1% product previously licensed to Teva Pharmaceuticals. Upon commercialization, ANI will pay Teva up to $5 million at a rate of 5% of the consideration received by ANI as a result of commercial sale of the product. According to IMS Health, the overall market for testosterone gel 1% was approximately $300 million in 2014. Testosterone gel is an androgen indicated for replacement therapy in males for conditions associated with deficiency or absence of endogenous testosterone including primary hypogonadism (congenital or acquired) and hypogonadotrophic hypogonadism (congenital or acquired).

PATENT (NEW APPROVAL/ LITIGATION/SETTLEMENTS)

7.1. Court blocks Novartis' biosimilar copy of Amgen's Neupogen May 08, 2015

- The U.S. Court of Appeals for the Federal Circuit in Washington has granted the Amgen's request for an injunction and that'll keep the biosimilar Zarxio-off the U.S. market while the court resolves Amgen's appeal of a lower-court ruling that gave Zarxio a go-ahead to roll out. The injunction will hold up Zarxio's launch until at least June 3-when oral arguments are scheduled-though it may take longer to resolve the case.

7.2. Merck scores victory in India patent battle over top diabetes meds May 16, 2015

- In a potentially promising sign for Western drug makers, Merck scored a victory in its patent battle with India's Glenmark Pharmaceuticals over generics of the drug maker's diabetes meds Januvia and Janumet. India's Supreme Court has blocked the generics company from marketing its cheap versions of the drugs in the country. Glenmark won an initial battle when the Supreme Court told the company it could continue to sell its knockoffs despite the impending suit. The court's latest decision stands in contrast to its usual rulings, which traditionally favour generics companies over Western drug makers.

TECHNOLOGY/NDDS NEWS

8.1. FDA OKs First Patient-Controlled Patch for Postoperative Pain May 01, 2015

- The US Food and Drug Administration has approved fentanyl iontophoretic transdermal system (Ionsys, The Medicines Co), the first needle-free, patient-controlled, pre-programmed fentanyl delivery system for management of acute postoperative pain in adults requiring opioid analgesia in the hospital, according to a company news release. Ionsys is a "novel alternative" to traditional intravenous patient-controlled analgesia that uses a "credit-card-sized, self-adherent device employing an imperceptible electric current to deliver on-demand fentanyl.

8.2. Otonomy completes patient enrolment in phase 2 trial for AuriPro to treat acute otitis media. May 11, 2015

- Otonomy, Inc. has completed enrolment in a phase 2 clinical trial evaluating AuriPro, a sustained-exposure formulation of the antibiotic ciprofloxacin, for the treatment of paediatric patients with acute otitis media with tympanostomy tubes (AOMT). The one-month, prospective, multicenter, open-label phase 2 clinical trial enrolled a total of 39 paediatric patients in the United States. The trial is designed to characterize safety, procedural factors and clinical effect of AuriPro administered in subjects with AOMT.

8.3. FDA approves Roche's cancer diagnostic as a guide to use of Amgen, Lilly meds May 13, 2015

- The FDA approved Roche's diagnostic for the KRAS mutation in metastatic colorectal cancer patients, saying it needed to identify those without the mutation, for whom treatment with Eli Lilly's Erbitux (Cetuximab) or Amgen's Vectibix (Panitumumab) may be effective. The KRAS Mutation Test companion diagnostic is polymerase chain reaction test intended to detect mutations on codons 12 and 13 of the KRAS gene using Roche's cobas 4800 system. It can be conducted in less than 8 hours.

8.4. Alnylam Files CTA for ALN-AAT, to treat Liver Disease May 17, 2015

- Alnylam Pharmaceuticals, Inc., a leading RNAi therapeutics company, announced that it has filed a Clinical Trial Application (CTA) with the U.K. Medicines and Healthcare products Regulatory Agency (MHRA) to initiate a Phase 1/2 clinical trial with ALN-AAT, a subcutaneously administered investigational RNAi therapeutic targeting alpha-1 antitrypsin (AAT) for the treatment of AAT deficiency associated liver disease.