10.5005/ijeds-9-1-v

EDITORIAL

Electronic Human Clinical Trial (eHCT)

In order to develop new drugs, medical devices and research protocols, all has to route through the rigorous process of clinical trial and data processing before it is adopted in clinical settings. Clinical trial basically involves following stages:

- Designing Study Protocol
- Research Site Selection
- Participant Recruitment
- Clinical Trial Monitoring
- Research Data Management
- Statistical Analysis
- Research Report Drafting
- Scientific Staging

New technologies have totally digitalized the way in which clinical trials are now being managed with introduction of electronic human clinical trial (eHCT). Worldwide biotech companies inclined their willingness to catch up with current engagements to carry out clinical trials that are highly influenced by information technology and computerized automated way. Big Data and Artificial Intelligence (AI) technologies are parallel to each other to synthesize and analyze ever-expanding data. AI-powered capacities, including data amalgamation, concept elucidation, design recognition and evolutionary modeling are essential to accumulate, normalize, analyze and harness the growing masses of data that fuel modern therapy development.

Instead of depending heavily on conventional and, so far, overburdened one-to-one model, industry must acquire technology that enables computed pattern. In particular, AI and other emerging technologies allow for outsourcing of routine tasks to machines, creating space in the schedule for human interaction between clinician and participants in the active trial. Larger access of technologies like cloud computing, AI, deep data mining and information technologies could significantly mitigate costs in drug development, trial site selection and data-driven decision-making. Depending upon computing abilities and computed algorithms, each step eventually becomes powerful enough to simulate the participant involvement in the clinical trial via auto-enrolment fashion to increase the efficiency of clinical trials and provide the market with targeted drugs that respond to the ever-increasing complexity of patient needs.

Key components of eHCT include:

- Optimization of Site Identification
- Digital Filtration of Participant Selection
- Auto-compliance Tools
- Real-time Decision-making
- Speeding Data Management
- AI-based Participant Monitoring
- Mapping Tools like Apps, Remote Sensors and Implanted Devices.

eHCT will totally change the way biotech industries, healthcare workers and participants engage in the clinical trial by higher level of interaction in real-time manner. Transition from fundamental model of clinical trial functioning to technology-centric pathway will require strategic design thinking and channelization.

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International Journal of Experimental Dental Science