Editorial
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Advances in Pediatric Therapeutic Development

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Editorial

The field of pediatrics has been acknowledged since early eras, comprising references from the works of Hippocrates. Children are prone to a number of diseases like adults, frequently leading to clinical treatment that uses the same drugs and biological products. Use of medications in children has a long and storied past from exposure to tetanus tainted diphtheria toxin, through the sulfanilamide pediatric formulation tragedy and the in utero exposure to thalidomide. Each of these misfortunes caused in legislation to encourage the development of safe and efficacious therapeutics. Even though the level of applicable investigation has been growing, only a fraction of the obtainable treatments in adults have been sufficiently evaluated in pediatric populations to assess age-appropriate dosing, tolerability, and efficacy. Although pediatricians characteristically give drugs to children 'off-label' (drug not specifically approved for use in children), it is known that children counter to drugs in a very different way than adults in terms of safety and efficacy. More than 50% of drugs used in children and more than 90% of drugs used in newborns lack proper pediatric labelling [1].

Mostly, there has been inadequate examination and improvement into pediatric medicines, which has been in part due to a lack of market forces and economic benefits for the pharmaceutical industry compared to those for adult products. There are numerous challenges found in pediatric drug development including ethical, operational, procedural, and financial restrictions. Developing medicines for pediatric populations is essentially comparable to developing orphan drugs. A foremost drawback in studying pediatric diseases is the relatively low incidence rate or individuality of certain ailments in children.

Pediatric drug development is complex and difficult. The challenge of obtaining adequate pediatric efficacy and safety data is the major cause for the unacceptable lag between adult approval and incorporating pediatric information in labelling. The advancement of innovative technologies in the pediatric pharmacology and preclinical phase of drug development will contribute to speed up both the development of new medicines for children and the pediatric clinical research.

The improvement of pediatric medicines has bigger challenges associated to the improvement of medicines intended for adult patients, which has led to a significant unmet medical need. Additional considerations need to be applied to the development of pediatric medications for low and middle-income countries (LMICs), including those linked to cost, acceptability, usability, heat stability, healthcare provider training, health policy, and local regulatory requirements. Although progress is being made, there is still a paucity of available age-appropriate pediatric medicines in LMICs. Numerous technology platforms comprising emerging technologies which may offer potential additional solutions to mitigate some of the challenges associated with the development and supply of pediatric products for LMICs. The global health community should maximize opportunities to address the disparity in access to medicines that meet the needs of neonates, infants and children, where there is a great opportunity on long term health impact.

References

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