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Novel Inhalable Drug Delivery System for Tuberculosis Treatment

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Novel targeted drug delivery systems have gained attention for the treatment of various chronic diseases with the limitations associated with conventional drug delivery treatment. Among various routes of drug delivery systems, the pulmonary route gained much importance to target drug delivery for both local and systematic treatment. Mostly the treatment efficacy depends on the technique by which the drug is delivered and optimum concentration reached, above or below this level leads to produce toxic or sub therapeutic action. Because of the high permeability and large absorptive surface area of lungs (approx 70-140 m2 in adult humans) and rich blood supply are encouraging or growing interests in developments in pulmonary drug delivery. The smaller airway and alveolar space accounts more than 95% of total lungs surface area and it is directly connected with the systematic circulation via the pulmonary capillary circulation. To deliver drugs into the pulmonary route, the most preferable devices are Dry powder inhalers. Chemotherapy of tuberculosis through inhalable drug delivery system is showing positive approach for eradicating Mycobacterium Tuberculosis by targeting both locally and systematically. This novel approach can maintain the drug concentration above therapeutic and below toxic levels for longer and longer duration with the different formulation development options like controlled or sustained drug delivery, mucoadhessive drug delivery. Nanometric range of anti tubercular drug loaded Nanoparticles or Nanospheres with different polymers and combination with any mucoadhessive polymers will offer excellent drug targeting and controlled release for longer duration of time. The drug loaded Nanospheres can make into inhalable dry powder Microparticulates by using inert carriers like mannitol, lactose monohydrate etc. So inhalable drug delivery is increasing interest in chemotherapy of tuberculosis.

Biography

Vishnu Vardhan Reddy Beeram pursuing PhD from VIGNAN'S University, Vadlamudi, Guntur, Andhrapradesh, India. He has Completed Master of pharmacy in Pharmaceutics specialization form Rajiv Gandhi University of Health and Sciences, Bengaluru, Karnataka, India. He has published more than 10 papers in reputed scientific journals.

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