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REVIEW ARTICLE

DR.R. SANTOSH KUMAR et al, The *Experiment, JULY.2012 Vol.1 (1), 8-10*

PLAN OF PERAMIVIR NEW TABLET FORMULAITON DEVELOPMENT WITH NATURAL POLYMER FOR IMMEDIATE RELEASE

ABSTRACT

Peramivir is an experimental antiviral drug developed by BioCryst Pharmaceuticals for the treatment of influenza. It has been authorized for the emergency use of treatment of certain hospitalized patients with known or suspected 2009 H1N1 influenza.[1] Peramivir is a neuraminidase inhibitor, acting as a transition-state analogue inhibitor of influenza neuraminidase and thereby preventing new viruses from emerging from infected cells. In October 2009, it was reported that the experimental antiviral drug peramivir had been effective in treating serious cases of swine flu.[5] On October 23, the U.S. Food and Drug Administration (FDA) issued an Emergency Use Authorization for Peramivir, allowing the use of the drug in intravenous form for hospitalized patients only in cases where the other available methods of treatment are ineffective or unavailable;[6] for instance, if oseltamivir (Tamiflu) resistance develops and a person is unable to take Relenza via the inhaled route. The Emergency Use Authorization expired on June 23, 2010.

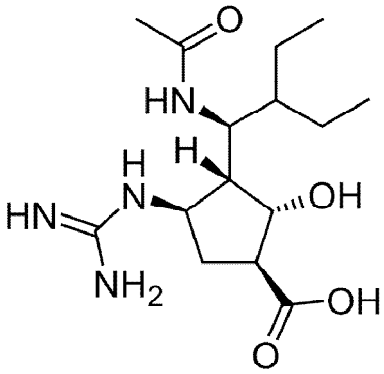

FIGURE.1 STRUCTURE OF PERAMIVIR

CRITERIA FOR USE

Patient not responding to either PO or inhaled antiviral therapy, 2.Drug delivery by route other than IV is not dependable or feasible, 3.Clinician judges IV therapy appropriate because of other circumstances

MECHANISM OF ACTION

Peramivir is a cyclopentane analogue that competitively binds to the active site of the influenza virus neuraminidase. Peramivir inhibits the neuraminidase activity of several strains of influenza A and B viruses; including H1N1 influenza A Influenza virus neuraminidase is a surface glycoprotein that catalyzes the cleavage of the linkage between a terminal sialic acid and adjacent sugar

residue. This action promotes the spread of virus in the respiratory tract by several mechanisms. Viral neuraminidase promotes the release of virions from infected cells; promotes the penetration of virus into respiratory epithelial cells; prevents the formation of viral aggregates; prevents viral inactivation by respiratory mucus; induces cellular apoptosis by activating transforming growth factor beta; and induces cytokines including interleukin-1 and tumor necrosis factor. No clinical data are available on the development of resistance to peramivir, and resistance pathways have not been fully described. Cross-resistance has been observed among influenza virus neuraminidase inhibitors. Oseltamivir-resistant and zanamivir-resistant organisms have shown reduced susceptibility to peramivir in biochemical assays. The relationship between biochemical assays and clinical efficacy has not been established

NATURAL POLYMERS IN THE FORMULATION OF MATRIX TABLETS

Semi synthetic and synthetic polymers have found their use in the technology of hydrophilic matrix systems with controlled release of the active ingredient, in particular in oral administration. In the recent period, there is increased interest also in natural polymeric substances, whose advantage consists in safety, easy availability, and a relatively low price. They thus represent an interesting possibility to extend the selection of novel constitutive auxiliary substances. The present review paper surveys the most important natural polymers: alginans, carrageen, Arabic gum, pectins, galactomanans, ispaghul, and xanthum gum as potential carriers for oral hydrophilic systems with controlled release of active ingredients and describes its origin, properties, and possible uses in pharmacy.

CONCLUSION

Peramivir only available in the form of injections. So with natural polymers we are planning formulations in tablet form. Our target is immediate release and immediate action like injection formulation.

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4. "Evaluation of the Efficacy and Safety of Peramivir in Adults with Acute Serious or Potentially Life-Threatening Influenza". National Institutes of Health. 2007-03-28.
5. "Life-Saving H1N1 Drug Unavailable to Most". *CBS Evening News* (Atlanta, GA, USA: CBS Interactive).
6. "Emergency Use Authorization Granted For BioCryst's Peramivir". *Reuters*. 2009-10-24.
7. "FDA Authorizes Emergency Use of Intravenous Antiviral Peramivir for 2009 H1N1 Influenza for Certain Patients, Settings".
8. Hirschler, Ben (2011-06-10). "Swine flu starting to show resistance to drugs". *Reuters*.
9. "Peramivir: Dosage and Administration". LifeHugger.

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