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ASSESSMENT OF PUBLIC OPINION ON VARIOUS METHODS ADOPTED FOR SAFE DISPOSAL OF UNWANTED MEDICATION IN MUVATTUPUZHA

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Abstract

Background: Improper disposal of drugs is an emerging serious issue that can affect the environment and human life by contaminate the air, earth and water bodies.

Objective: To assess the disposal practices adopted for unused medications.

Methods: By utilizing a predesigned questionnaire, distributed and filled by general public in Muvattupuzha, Kerala to assess their awareness, knowledge, and practice toward disposal of expired and unused drugs.

Results: A total of 509 participants were included in the study, 388 males and 122 females, with 179 graduates and 331 undergraduates. It was observed that 78.0% dump their unused medications to the garbage and 49.9% said antibiotics were disposed of by throwing into sewage. 68.2% respondents stated that they didn't receive any guidelines for disposal of drugs. On analyzing overall result 28.35% of the total population were disposing drugs safely, and one-third population (71.64%) were disposing by harming the environment. Thus indicating, need for proper medicine disposal scheme as pointed out by 88.6% of respondents.

Conclusion: This study shows that gaps exist in the knowledge and practice about the proper disposal of expired and unused medications, with need for proper disposal scheme.

Key Words: Drug Disposal, Expired and Unused drugs.

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NATURAL AND SMALL MOLECULE INHIBITORS OF TYPE III SECRETION SYSTEM OF *Salmonella enterica*: A CRITICAL REVIEW

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Abstract

The importance of developing new antibiotics has long been recognized by the scientific community. The bacterial type III secretion system (T3SS) is an attractive anti virulence target as it is essential in the pathogenesis of many Gram-negative bacteria. Recent studies to develop T3SS inhibitors revealed that salicylideneacylhydrazide, syringaldehyde and thiazolidinone derivatives with 3,5 dimethoxy 4 phenol group possessed better T3SS activity. Moreover, many natural products have been identified to possess type III secretion system T3SS inhibitory properties. However, their biological targets remain unknown. The chemical diversity of T3SS inhibitors suggests that there are many different targets for T3SS inhibitors. This complicates the further design of new and more potent analogs. In this review we focused on specific inhibitors of Salmonella T3SS, to understand their structural features in relation to activity. A number of laboratories in the past few years, have made extraordinary efforts to discover new synthetic T3SS inhibitors but none of them advanced into the clinical studies. One major issue, along with anonymity of target, is that the current small molecule T3SS inhibitors have limited potency, with IC₅₀ values in the single digits of micro-molar concentrations. Also, structurally related compounds demonstrated different efficiencies and consequences. If the complete structural elucidation of all of the T3SS structural proteins, effector proteins and chaperones can be achieved, the clear targets for T3SS inhibitors will be within reach. With a better understanding of their binding partners and mechanism of action, modern methods of analog design (e.g., computational modelling) can be employed effectively. This review provide an overall picture of the structure of T3SS, the history of development of T3SS inhibitors, Important chemical parameters required for the development of potent T3SS inhibitors and critically analyse the barriers for development of potent T3SS inhibitors.

Key words: T3SS inhibitors, Anti virulence target, Salmonella enterica

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