

The Effect of Ondansetron on Decreasing the Hospitalization Rate in Children with Gastroenteritis and Recurrent Vomiting

Manoochehr Mahram,¹ Maryam Darabi,² and Sonia Oveisi^{3,*}

¹Professor of Pediatrics, Children Growth Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

²Resident of Pediatrics, Children Growth Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

³Associate Professor of Maternity and Child Health, Metabolic Diseases Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

*Corresponding author: Sonia Oveisi, Associate Professor of Maternity and Child Health, Metabolic Diseases Research Center, Qazvin University of Medical Sciences, Qazvin, Iran. Tel: +98-9125042401, E-mail: soveisi@razi.tums.ac.ir

Received 2016 October 09; Accepted 2016 October 10.

Abstract

Background: Diarrhea is one of the most common disorders in infancy and childhood and recurrent vomiting is a main reason for hospitalization for these patients. This study was to assess the effect of injective ondansetron on decreasing the hospitalization rate in children with diarrhea and recurrent vomiting.

Methods: In this clinical trial study, patients between six months and six years, with acute viral diarrhea and recurrent vomiting, were assessed for the possibility of being treated as outpatients, based on their response to ondansetron, compared to a control group who did not receive ondansetron. The sample size was 100 for each group. Cases for the ondansetron group were under observation for at least two hours in the emergency ward and were followed until 72 hours to find out if there was any need for them to return to the hospital due to vomiting. Otherwise, all cases in the control group were hospitalized. Data of both groups, including the rate and duration of hospitalization, was analyzed.

Results: Of the 100 individuals who received ondansetron (n = 91) 91% did not need to be hospitalized and 9 patients needed to be admitted in the next 72 hours, while (n = 100) 100% of control group were hospitalized (P value = 0.003). Vomiting in the control group continued in 35% of patients after 72 hours of admission. The duration of hospitalization for the patients of the control group was 2.94 ± 1.40 (mean \pm SD) days.

Interpretation: Ondansetron can be considered as an effective agent to decrease the hospitalization rate in infants and children with diarrhea as well as vomiting. Injective forms of ondansetron seem to be more achieved than oral forms.

Keywords: Infant, Child, Diarrhea, Vomiting, Ondansetron, Hospitalization

1. Introduction

Diarrhea is one of the most common disorders in childhood. The world health organization (WHO) and UNICEF estimate that almost 2.5 billion episodes of diarrhea occur annually in children under 5 years of age in developing countries. The overall incidence of diarrhea is about 3.6 episodes per child a year and it is estimated to account for 13% of all childhood disability adjusted life years (DALYs) (1). Since recurrent vomiting is one of main reasons for admission of infants and children with gastroenteritis (GE) in hospitals, control of vomiting in these patients can decrease the rate of hospitalization and lead to oral rehydration therapy (ORT), which is the preferred method for rehydration of the patients and is also endorsed by WHO and other major health organizations (2). Rather than medical benefits of treatment of GE patients as outpatient cases at home, there are many socioeconomic advantages for the family and community, due to not admitting a child or in-

fant into a hospital. Heavy costs of hospitalization, with the fact that a large number of people are not under insurance coverage in Iran, it is necessary to have a person accompanying the child/infant during their hospitalization period. However, this may lead to other problems such as when the parent or guardian is employed or has a problem caring for other children at home etc. Also, some problems related to health care systems, such as increased hospital occupancy, deficiencies in nurses and not enough hospital equipment are some of problems due to high rates of hospitalization for children and infants with diarrhea and vomiting. In addition, drugs-related adverse events predominate in academic pediatric centers, with children aged more than 1 year to 5 years (3). Freedman et al., in their conducted cost analysis study in USA and Canada, found out that routine administration of ondansetron to eligible children would annually save society 65.6 million US dollars and health care payers 61.1 million US dollars. In