

Awareness Among Dental Students About Oseltamivir Therapy In Treatment Of Influenza

Research Article

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Abstract

Introduction: Oseltamivir is perhaps the active metabolite oseltamivir carboxylate prodrug which would be a particular influenza virus inhibitor. Oseltamivir has also been demonstrated to have been therapeutically effective for influenza intervention as well as chemoprophylaxis both in adults and children alike.

Aim: The research was designed to assess the awareness of Oseltamivir therapy in influenza treatment amongst dental students.

Materials and Method: This was a cross-sectional form of study based on a questionnaire which included 100 dental college students in Chennai. A self-designed questionnaire with ten questions that elicit information and awareness among dental college students about Oseltamivir therapy. Questionnaires were distributed via an online database survey planet. Questions discussed understanding of oseltamivir treatment, signs, counter-indications, action mechanism and side effects. Data were collected and analyzed after the responses were obtained from 100 participants.

Results: 17% were aware about Oseltamivir therapy in influenza. 14% were aware of the mechanism of action of Oseltamivir therapy in treatment of influenza. 12% were aware of the indications of Oseltamivir therapy. 12% were aware of the contraindications of Oseltamivir therapy. 10% were aware of the side effects of Oseltamivir therapy.

Conclusion: There was less awareness amongst dental students about Oseltamivir in treating viral influenza infections. Additional information and education initiatives should really be implemented to disseminate knowledge on oseltamivir therapy.

Keywords: Awareness; Oseltamivir; Influenza.

Introduction

Oseltamivir is possibly the effective carboxylate metabolite oseltamivir prodrug which is a specific inhibitor of the influenza virus. Oseltamivir has been shown to be effective in treatment for influenza treatment and also for chemoprophylaxis for both children and adults and has been provincially regulated for its use in 80 countries. Oseltamivir carboxylate (OC), the active metabolite of parent oseltamivir prodrug, is indeed a specific and effective antagonist of most influenza A NA subtypes. OC restricts NA mostly in low nanomolar scale at the IC₅₀s. Oseltamivir's specificity for influenza NA is extensive also at 1mM, OC had little or no inhibition effect against NA from samples apart from

influenza viruses[1-3].

Oseltamivir is effective by mouth in a number of animals. Inter-species variations in esterase activity allow specific concentrations to be delivered to assure that the carboxylate plasma levels reach antiviral-related levels. Mice need an oseltamivir dose of 10 mg /kg, ferret 5 mg / kg as well as chicken 120 mg / kg to reach the same region under curve as just oral dosage of 75 mg twice everyday in humans. Oseltamivir was demonstrated to be successful in vitro and vivo in rodents against such a recombinant influenza A viruses that includes the H1 and N1 sequences of the flu epidemic virus of 1918.

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Avian influenza virus transmission to humans has been reported on many instances since 1997. The effectiveness of oseltamivir against such subtypes has been demonstrated in vitro and in different animal models. In an animal model of influenza infection, oseltamivir's potency toward H5N1 and H9N2 viruses was illustrated both in vitro and vivo [4, 5].

Oseltamivir has been used to manage the propagation of H7N7 avian influenza virus to people in Netherlands. All initial clinical cases were treated with oseltamivir at 75mg doses twice every-day and a prophylactic protocol has been used to protect poultry workers including their communities that was to be extended until 2 days since their last contact. The research was designed to assess the awareness of Oseltamivir therapy in influenza treatment amongst dental students.

Materials and Method

This was a cross-sectional form of study based on a questionnaire

which included 100 dental college students in Chennai. A self-designed questionnaire with ten questions that elicit information and awareness among dental college students about Oseltamivir therapy. Questionnaires were distributed via an online database survey planet. Questions discussed understanding of oseltamivir treatment, signs, counter-indications, action mechanism and side effects. Data were collected and analyzed after the responses were obtained from 100 participants.

Results

17% were aware about Oseltamivir therapy in influenza (Fig 1). 14% were aware of the mechanism of action of Oseltamivir therapy in treatment of influenza (Fig 2). 12% were aware of the indications of Oseltamivir therapy (Fig 3). 12% were aware of the contraindications of Oseltamivir therapy (Fig 4). 10% were aware of the side effects of Oseltamivir therapy (Fig 5).

Figure 1. Awareness about Oseltamivir therapy in influenza.

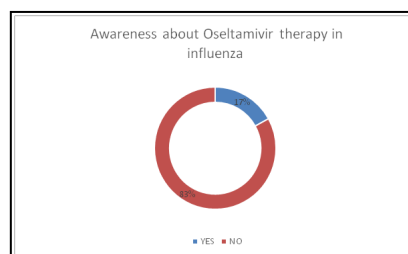


Figure 2. Awareness about mechanism of action of Oseltamivir therapy.

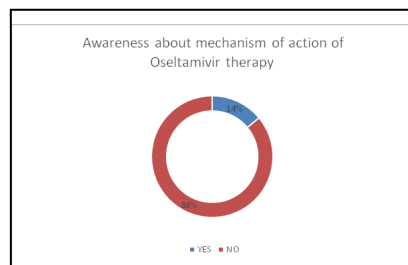


Figure 3. Awareness about indications of Oseltamivir therapy.

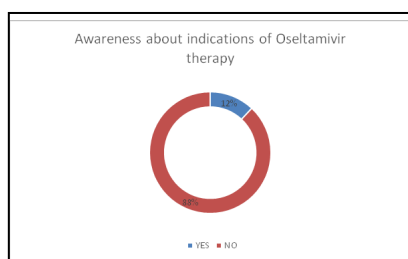


Figure 4. Awareness about contraindications of Oseltamivir therapy.

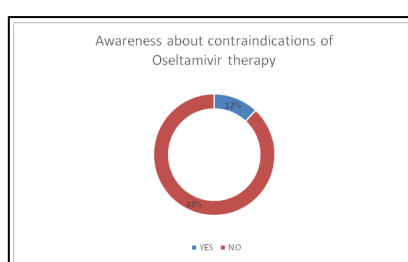
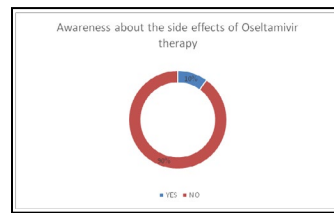


Figure 5. Awareness about the side effects of Oseltamivir therapy.

Discussion

Oseltamivir is currently indicated for the treatment of influenza in patients aged ≥ 1 year. The adult dosage is 75mg twice daily, with weight-based unit dosing using the suspension for children. Dose adjustment is only necessary in patients with severe renal impairment, as evidenced by a creatinine clearance (CLCR) < 30 mL/min. The effectiveness of oseltamivir in the treatment of influenza infection has been demonstrated in a range of clinical studies [6]. The key benefits of oseltamivir treatment were earlier resolution of illness combined with earlier return to normal health and ability to carry out normal activities. For patients with co-morbid conditions, particularly cardiovascular and persistent respiratory disorders, convergence of influenza symptoms and underlying conditions precluded faster resolution presentation of all symptoms. Nevertheless, there was a substantial decrease in the length of febrile illness.

The effects of treatment with oseltamivir are not limited to treating influenza complications. There is strong evidence that medication with oseltamivir results in a decrease in symptoms of the ancillary lower respiratory tract infections, and hospitalization [7]. Studies about the usage of oseltamivir in the prevention of influenza hazards in immunosuppressed individuals after bone marrow transplants have been reported recently [8]. While not a controlled trial, the researchers concluded that oseltamivir use was very well accepted in accordance with studies from the very same center in prior episodes but that it had played a significant role in this research.

No major safety issues have emerged which could restrict oseltamivir's feasibility for influenza prevention and treatment in all authorized clinical groups. A most prevalent detrimental condition recorded was nausea. Certain events recorded more commonly in pediatric patients with oseltamivir included stomach cramps, epistaxis, ear disease and conjunctivitis [9, 10].

Suggestions for use of oseltamivir in a disease outbreak are informed by the priorities of a specific government and its infection control policy with in its populations. When the goal is to reduce complications, hospital admissions and accidents and the subsequent use of assets, then care appears to be a viable option. If the aim is to manage outbreaks and avoid their spread, therefore the method of choice will be prophylaxis even without care of the sick [11, 12].

Conclusion

There was less awareness amongst dental students about Oseltamivir in treating viral influenza infections. Additional information and education initiatives should really be implemented to disseminate knowledge on oseltamivir therapy.

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