EFFECT OF THE POVIDONE IODINE, HYPERTONIC ALKALINE SOLUTION AND SALINE NASAL LAVAGE ON NASOPHARYNGEAL VIRAL LOAD IN COVID-19

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October 26, 2022

Abstract

Objective: The causative virus of COVID-19 is SARS-CoV-2. The aim of the present study was to invastigate the in vivo virucidal activity of nasal irrigation with saline, nasal irrigation with Povidone-iodine (PVP-I) 1%, nasal irrigation with hypertonic alkaline and nasal irrigation with PVP-I 1% against SARS CoV- 2. Design: The present study was a prospective randomized clinical trial. Setting: A multicenter study involving tertiary care centers. Participants: The study included adult outpatients whose qualitative SARS-CoV-2 RT-PCR tests in nasopharyngeal swabs were positive. One hundred twenty patients divided into four equal groups. Standard COVID-19 treatment was given to group 1 (n=30), nasal irrigation containing isotonic solution was added to patients' treatment in group 2 (n=30), nasal irrigation containing 1% PVP solution was added to patients' treatment in group 3(n=30), and nasal irrigation containing 1% PVP solution and nasal irrigation containing hypertonic alkaline solution was added to patients' treatment in group 4 (n=30). Main outcome measures: On the first day of diagnosis (day 0), nasopharyngeal swab samples were taken, on the 3rd and 5th days the nasopharyngeal viral load reduction in quantitative RT-PCR tests were calculated. Results: Between the 0-3rd Day and 0-5th days, the nasopharyngeal viral load reduction was significant in all groups ($p< .05$). In paired comparisons of groups, the nasopharyngeal viral load decrease in group 4 in first 3 days was significantly lower than all groups ($p < .05$). The nasopharyngeal viral load degrease in groups 3 and 4 in the first 5 days were significantly lower than group 1 ($p < .05$). Conclussion: This study was reveal that the use of hypertonic alkaline nasal irrigation together with 1% povidone-iodine was more effective in reducing viral load in the early period. The decreased nasopharyngeal viral load may reduce the carriage of infectious SARS-CoV-2 in patients. Our results suggest that 1% povidone-iodine and hypertonic alkaline nasal irrigation may be promising modality to prevent the COVID-19 epidemic.

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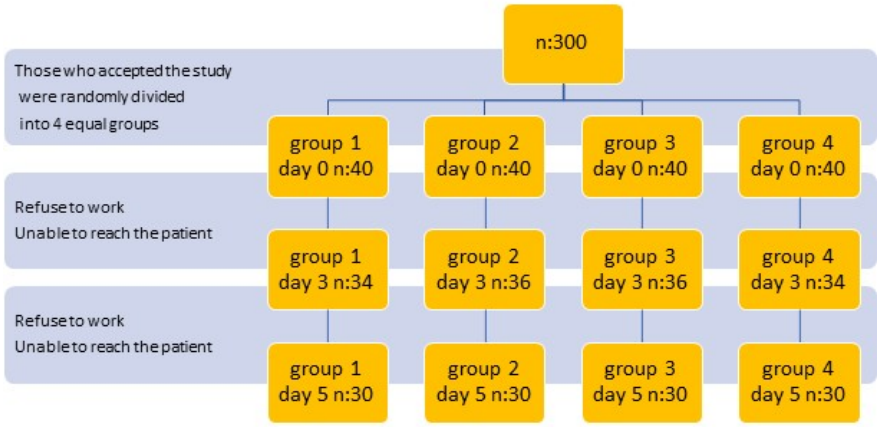

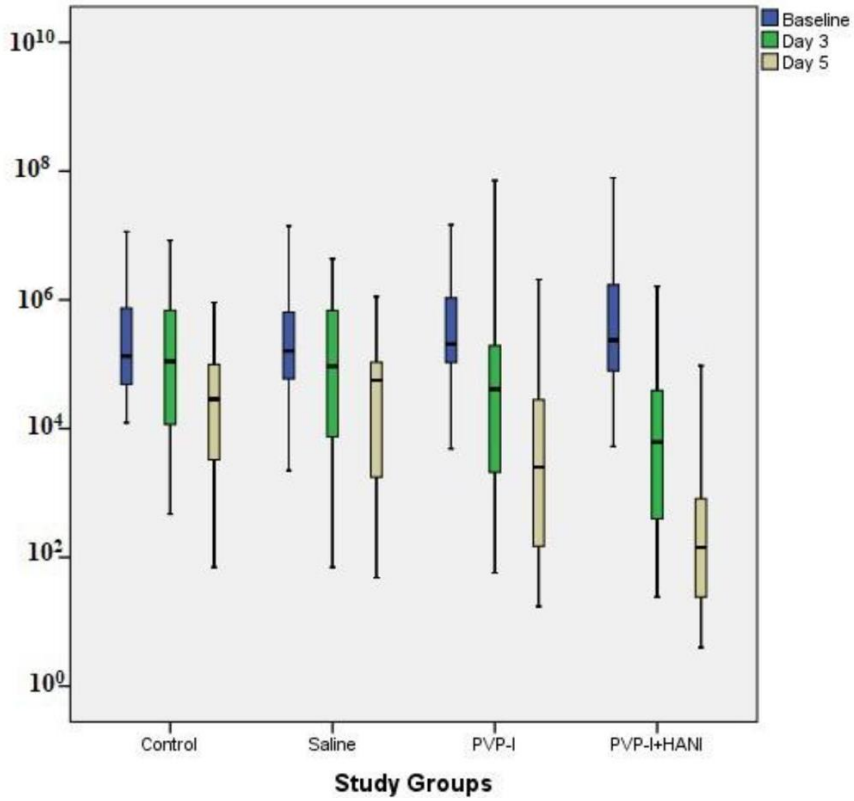

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