SURVIVAL OF *VIBRIO CHOLERAE* ON DIFFERENT FINGER LOCATIONS OF A VOLUNTEER FOLLOWING ARTIFICIAL INOCULATION

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Abstract. The importance of bacteria-suspending media and fingertip positions on the survival of *Vibrio cholerae* on human fingertips were examined. Vibrios were suspended in phosphate-buffered saline (PBS), PBS with albumin, and PBS with agarose. Each type of preparation was inoculated on the fingerpads, the hyponychia, or the eponychia and lateral nail grooves of the fourth, third and second fingers of a volunteer's hand. The last finger inoculated was immediately washed with PBS and the washing collected for examination ("0 minute" exposure). The third and fourth inoculated fingers were likewise washed for examination 2 and 5 minutes later, respectively. The vibrios obtained from the washings were enumerated by culture. For each of the different groups, which consisted of a different inoculated fingertip position, bacteria-suspending medium and exposure period of 2 or 5 minutes, the proportion of replicate inoculated fingers which retained viable vibrios (isolation rate) and the mean number of surviving vibrios, as a percentage of the inoculated vibrios at "0 minute exposure" (survival rate) were as follows: finger pads: vibrios in PBS, 2 minutes post-inoculation (isolation rate, 25%; mean survival rate, 0.002%); 5 minutes post-inoculation (isolation rate, 0%; mean survival rate, 0%). PBS-albumin: 2 minutes post-inoculation (60%, 0.004%); 5 minutes post-inoculation (40%, 0.03%). PBS-agarose: 2 minutes post-inoculation (100%, 24%); 5 minutes post-inoculation (38%, 0.005%). Lateral nail grooves and eponychia: PBS: 2 minutes post-inoculation (100%, 2.2%); 5 minutes post-inoculation (44%, 0.2%). PBS-agarose: 2 minutes post-inoculation (100%, 32%); 5 minutes post-inoculation (100%, 0.7%). Hyponychia: PBS: 2 minutes post-inoculation (100%, 8%); 5 minutes post-inoculation (100%, 0.2%). PBS-agarose: 2 minutes post-inoculation (100%, 46%); 5 minutes post-inoculation (100%, 8%). The results show that vibrios in moisture-retaining medium (PBS-agarose) and inoculated on a sheltered fingertip locations (hyponychium) have the best survival rates. However, the high survival rate was maintained briefly.

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