

In Vitro Synergistic Effects of Simvastatin on Voriconazole Zone of Inhibition in the Presence of Current Quinolones

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SUMMARY. This study was designed to ascertain possible synergistic and antagonistic effect of simvastatin on voriconazole antimicrobial activity in presence of current quinolones. Total eight groups were used. Antibiotic, antifungal and statin interactions were noticed by using “well diffusion” method. Significant difference was observed between voriconazole + moxifloxacin (VM) and voriconazole + levofloxacin + simvastatin (VLS) groups showed significance P value = 0.0076. The percentage shift in zone of inhibition (of voriconazole zone diameter) was, positive control = 100%, voriconazole + simvastatin (VS) = 116%, voriconazole + ciprofloxacin (VC) = 104%, VM = 84%, voriconazole + levofloxacin (VL) = 90%, voriconazole + ciprofloxacin + simvastatin (VCS) = 90%, voriconazole + moxifloxacin + simvastatin (VMS) = 89%, VLS = 118%. Levofloxacin, voriconazole and simvastatin have synergistic effect on zone of inhibition against *Aspergillus fumigatus*. Simvastatin alone increased the zone of inhibition in presence of voriconazole. However, ciprofloxacin and moxifloxacin also showed some decrease in presence of voriconazole. However ciprofloxacin and moxifloxacin also showed some decrease in the zone of inhibition in presence of Voriconazole against *Aspergillus fumigatus* once simvastatin was added.

RESUMEN. Este estudio se diseñó para determinar el posible efecto sinérgico y antagónico de la simvastatina sobre la actividad antimicrobiana de voriconazol en presencia de las quinolonas actuales. Se utilizaron un total de ocho grupos. Las interacciones de antibióticos, antifúngicos y estatinas se notaron utilizando el método de “difusión bien”. Se observó una diferencia significativa entre los grupos voriconazol + moxifloxacina (VM) y voriconazol + levofloxacina + simvastatina (VLS) que mostraron un valor de P significativo = 0,0076. El cambio porcentual en la zona de inhibición (del diámetro de la zona de voriconazol) fue, control positivo = 100%, voriconazol + simvastatina (VS) = 116%, voriconazol + ciprofloxacina (VC) = 104%, VM = 84%, voriconazol + levofloxacina (VL) = 90%, voriconazol + ciprofloxacina + simvastatina (VCS) = 90%, voriconazol + moxifloxacina + simvastatina (VMS) = 89%, VLS = 118%. Levofloxacina, voriconazol y simvastatina tienen efecto sinérgico en la zona de inhibición contra *Aspergillus fumigatus*. La simvastatina sola aumentó la zona de inhibición en presencia de voriconazol. Sin embargo, la ciprofloxacina y la moxifloxacina también mostraron cierta disminución en la presencia de voriconazol. Sin embargo, ciprofloxacina y moxifloxacina también mostraron cierta disminución en la zona de inhibición en presencia de Voriconazol contra *Aspergillus fumigatus* una vez que se añadió simvastatina.

KEY WORDS: antimicrobial, quinolones, statins, synergistic effects.

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