INFECTION OF VASCULAR ENDOTHELIAL CELLS WITH HEMORRHAGIC CONJUNCTIVITIS VIRUSES, ADENOVIRUSES AND COXSACKIEVIRUS

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Epidemic viral conjunctivitis is a common infectious disease in Taiwan. The main causative agents are subgenus D of adenoviruses and caxsackievirus A type 24 varaint of enterovirus. Subconjunctival hemorrhage is a characteristic of enteroviral conjunctivitis. However, adenovirus-associated conjunctivitis also exhibited an increased incidence of subconjunctival hemorrhage in a survey of Kaohsiung Medical University from 1995 to 1997. Moreover, animal adenovirus was reported to cause a systemic hemorrhage and lethal disease in deer of North America. To study the pathogenesis of bleeding after an ocular infection of the adenoviruses and coxsackievirus, we tested the susceptibility of vascular endothelial cells to adenovirus type 19 (Ad19) and type 37 (Ad37) and coxsackievirus A type 24 variant (CA24v). The results showed that in 20 strains of Ad19 or Ad37, eighteen strains exhibited cytopathic effects in vascular endothelial cells while 17 in 20 strains of CA24v showed cytopathic effects. By comparing the relative $TCID_{50}$ of infected HUVEC and HeLa, CA24v exhibited a higher infectivity than adenoviruses. Furthermore, we compared the endothelial susceptibility to hemorrhagic and non-hemorrhagic strains of viruses. However, no significant difference of infectivity between hemorrhagic and non-hemorrhagic strains of adenoviruses and CA24v was noted. This study exhibited that vascular endothelial cells are in vitro susceptible to conjunctivitis viruses, irrespective of hemorrhagic or non-hemorrhagic strains.

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