ポスター

心血管発生・基礎研究③

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[II-P-132]シクロオキシゲナーゼ阻害薬は鳥類動脈管を収縮させる

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Background: Ductus arteriosus (DA) is an essential fetal artery that connects the main pulmonary artery and the descending aorta. Decreases of circulating prostaglandin E_2 (PGE_2) transferred from its placenta close mammalian DA right after birth. Avian DA also closes after birth although avian has no placenta that is a source of PGE_2 in rodent and mammalian. Previous research demonstrated that PGE_2 signal pathway is not involved in constriction of isolated chicken DA. However, *in vivo* effects of PGE_2 in avian DA is not fully clarified.Aim: The aim of this study is to elucidate effects of PGE_2 in chicken DA closure.Method and results: First, we measured expressions of PGE_2 in chicken at day 19 embryo by enzyme immunoassay. Blood concentration of PGE_2 in chicken was significantly higher than that of rat at termed embryo. And, PGE_2 in the chicken DA tissues was higher expressed than that of the chicken aorta tissues. These data suggested that PGE_2 works on fetal chicken DA. Next, we performed a rapid whole-body freezing method to evaluate DA closure *in vivo*. We measured internal diameter of DA and the aorta at 4hrs after *in ovo* injection of indomethacin. Indomethacin decreased the internal diameter ratio of DA and the aorta at day 19 embryo *in vivo*. These data suggested that PGE_2 is an important factor in avian DA closure although avian has no placenta that is a source of PGE_2. Conclusion: Inhibition of cyclooxygenase contracts chicken DA. Prostaglandin $E2_2$signal may play an important role in an acute response of chicken DA closure.