

S-R-5

Charge-dependent binding of polymeric IgA to human mesangial cells in IgA nephropathy (IgAN).

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Objectives : The mechanism of polymeric IgA deposition in the kidney mesangium is poorly understood in IgA nephropathy (IgAN). It has been suggested that increased sialic acid content and anionic charge in polymeric IgA molecules may be operational in the IgA deposition in the human mesangial cells (HMC). The present study examined the binding of polymeric IgA with different surface charges to HMC. The characteristics of binding of IgA to HMC in the presence of polycation (poly-L-lysine) or polyanion (heparin) were also investigated.

Methods : IgA were purified in sera from patients with IgAN and from healthy donors by jacalin affinity chromatography. IgA were further separated into polymeric and monomeric IgA by fast protein liquid chromatography (FPLC). Polymeric or monomeric IgA with different net charge on their surface were resolved by ion exchange chromatography (IEC) with MonoQ column. The binding characteristics of polymeric and monomeric IgA to HMC in the presence or absence of polycation or polyanion were examined by flow cytometry.

Results : Two major peaks (Pk 1 & Pk2) were resolved when polymeric IgA from patients with IgAN was subjected to anion exchange chromatography with MonoQ column. Pk 1 was eluted at 0.37 M NaCl and Pk 2 was eluted at 0.42 M NaCl. Under identical condition, one major peak, Pk3 (eluted at 0.33 M NaCl), was resolved in monomeric IgA. Polymeric IgA interacted with MonoQ exchanger stronger than monomeric IgA and the binding of polymeric IgA to HMC was significantly higher than that of monomeric IgA ($p < 0.05$). IgA that interacted strongly with ion exchanger (Pk2) also bound more to HMC when compared with IgA with weaker interaction with ion exchanger (Pk1) ($p < 0.01$). The amount of Pk2 in polymeric IgA from patient was significantly higher than that of the healthy control ($p < 0.05$). The presence of poly-L-lysine increased the binding of polymeric IgA to HMC. The binding of polymeric IgA to HMC was decreased by pre-incubation with heparin.

Conclusions : The binding of IgA to HMC is charge-dependent. Polymeric IgA with the highest net negative charge bind more to HMC. Pre-incubation with poly-anion decreased the binding of polymeric IgA to HMC. All these observation indicate the important role of anionic charge in mesangial IgA deposition.

S-N-1

Regional cerebral blood flow study in postictal psychosis complication complex partial seizure

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Postictal psychosis (PP) is an uncommon complication in patients with complex partial seizure (CPS). PP is associated with furies of complex partial seizures and usually occurs after a short lucid interval. The analogy of memory loss due to Todd's palsy was postulated as the pathogenic mechanism without definite proof. In this communication, we reported a regional cerebral blood flow study in patients with PP. Three consecutive patients with CPS complicated by PP were examined by cerebral Single Photon Emission Computerized Tomography (SPECT) scan. We compared the cerebral SPECT scan performed during PP with that done during the interictal period. Regional hyperperfusion signals were seen in right temporal lobe (3/3) and contralateral basal ganglia (2/3). Quantitative analysis showed the difference in the asymmetry index, ranging from 155.9% to 1167.8%. The hyperperfusion signs could implicate an abnormal subcortical electrical propagation involving the left basal ganglia and right temporal lobe as the mechanism for PP.