These decreases in IPSC amplitude and sIPSC frequency might be due to the depletion of synaptic vesicles. Dideoxyadenosine（an adenylate cyclase inhibitor, 5 μM）with STN-HFS induced IPSC-LTD in two neurons tested. The relative amplitude of IPSC was 0.709. This decrease in IPSC amplitude was accompanied the decrease in sIPSC frequency. Thus, it is suggested that the activation and inhibition of adenylate cyclase with STN-HFS resulted in IPSC-LTP and-LTD through the presynaptic mechanism, respectively.

P1-03.

重症筋無力症患者における IL-10 産生とステロイドによる治療効果との関連

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【目的】 重症筋無力症（MG）は、神経筋接合部のシナプス後膜に存在する標的抗原に対する自己抗体の作用により、神経筋接合部の刺激伝達が障害されて生じる自己免疫疾患である。副腎皮質ステロイド（GC）を用いた免疫抑制治療が基本となる。GC は細胞質に存在する GC 受容体（GR）-alfa に結合し、二量体を形成した後に核内へと移行する。GR-alfa のアイソフォームである GR-beta が GR-alfa とヘテロ二量体を形成し GR-alfa の活性を阻害する。

IL-10 は炎症性サイトカインの産生を制御し、制御性 T 細胞（Treg 細胞）を誘導する。一方で、B 細胞の分化、増殖、および抗体産生との関連が明らかとされている。MG 患者末梢血単核細胞（PBMC）を用いて T 細胞における IL-10 産生とステロイド受容体発現との関連について検討を行った。

【方法】 東京医科大学病院神経内科を受診し、インフォームドコンセントの得られた MG 患者 43 名（男性 15 名、女性 28 名、平均年齢 61.3±16.8 歳）および健常者 6 名（男性 3 名、女性 3 名、平均年齢 39.2±14.1 歳）を対象とした。末梢血単核細胞における GR-alfa および GR-beta mRNA 発現量をリアルタイム RT-PCR 法で測定した。

【結果】 MG 患者では T 細胞における IL-10 産生率（%）は、健常者群と比較して有意に低値を示した。しかしながら、抗アセチルコリン抗体価との関連はみられなかった。MG 患者 PBMC における GR-alfa および GR-beta mRNA 発現量はいずれも健常者に比べて、有意に低値を示した（p=0.002 および p=0.038）。MG 患者 T 細胞における IL-10 産生率（%）と GR-alfa mRNA 発現量との間に有意な負の相関がみられた（p=0.0060）。

【結語】 MG 患者 PBMC における GR-alfa 発現は、T 細胞の IL-10 産生が高い MG 患者ほど低く、ステロイドに対する応答性に影響を及ぼす可能性が示唆された。

P1-04.

The role of corneal lymphangiogenesis in a murine bacterial keratitis model

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【Purpose】 We previously reported that lymphatic vessel formation in a murine bacterial keratitis model using Pseudomonas aeruginosa was significantly reduced by macrophage depletion（ARVO 2016）. In this study, we evaluated the role of corneal lymphangiogenesis by evaluating clinical score and corneal edema.

【Methods】 A mouse bacterial keratitis model was established using Pseudomonas aeruginosa strain PAO-1 in C57BL/6 mice. After the corneal epithelium was scratched, strain PAO-1（1×105 CFU/2.5 Ul）was inoculated in the control group. In addition to establishing bacterial keratitis model, macrophages were depleted in the macrophage depleted group. Alteration of lymphangiogenesis by macrophage depletion was also evaluated by intraperitoneal injection of clodronate-containing liposomes on days 4, 8, and 12 post-inoculation. Lymphangiogenesis and macrophage infiltration were evaluated by immunostaining using

whole-mount cornea on day 14 post-inoculation. Anti-LYVE-1 antibody, anti-CD11b antibody and anti-F4/80 antibody were used for immunostaining. Corneal infection was graded by a previously reported method and central corneal thickness as a measure of corneal edema was evaluated by anterior segment optical coherence tomography（CASIA SS-1000 ; Tomey, Nagoya, Japan）.

【Results】 Lymphangiogenesis was significantly reduced by macrophage depletion on day 14 post-inoculation. There is no significant difference the control group and the macrophage depleted group on day 7 postinoculation. However, clinical infection score and corneal edema significantly increased in the macrophage depleted group on day 14 post-inoculation.

【Conclusions】 These results suggest that the process of lymphangiogenesis in bacterial infection of the cornea presumably suppresses keratitis in the late stage of infection.

P1-05.

Amyloid and tau positron emission tomography in diabetes-related dementia

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Our proposed clinical entity, referred to as diabetes-related dementia（DrD）, describes a dementia state predominantly associated with type 2 diabetes mellitus（DM）-related metabolic abnormalities. We studied 11C-PiB and 11C-PBB3 positron emission tomography（PET）in 29 subjects with DrD and 5 subjects with Alzheimer disease（AD）associated with DM to assess amyloid and tau deposits in the brain. Different from AD, only 11 out of 29 subjects（38%）with DrD showed positive PiB, whereas 17 out of 19（89%）showed positive PBB3. Depending on positivity of PiB and PBB3, we classified subjects with DrD into a negative PiB and positive PBB3 pattern（53%）, indicating tauopathy, a positive PiB and positive PBB3 pattern（32%）, indicating AD pathology, or a negative PiB and negative PBB3 pattern（16%）, indicating non-specific neuronal damage. DrD showed variable amyloid and tau accumulation patterns in the brain. DrD may be associated predominantly with tau pathology, in addition to AD pathology and non-specific neuronal damage due to DM-related metabolic abnormalities.

P1-06.

Analysis of aggregated proteins in HSPB8 myopathy using zebrafish models

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Heat shock protein B8（HSPB8）, a member of the small heat shock protein family, is known to have chaperone activity and be involved in protein quality control. Previous studies reported that mutations in *HSPB8* cause several neuromuscular diseases. Recently, two novel candidate mutations of *HSPB8* were identified in families with protein-aggregated myopathy. However, the pathogenic mechanisms of HSPB8 myopathy remains to be elucidated. In this study, we firstly establish zebrafish models of HSPB8 myopathy to confirm the pathogenicity of these novel *HSPB8* mutations. We also tried to identify abnormal aggregated proteins for the purpose of clarifying the pathological mechanisms of HSPB8 myopathy. We carried out microinjection of wild-type or mutant human *HSPB8* mRNA in zebrafish embryos at 1-2 cell stage. Then we analyzed phenotype of these fish at 5 days post-fertilization. Overexpression of mutant *HSPB8* mRNA resulted in morphological abnormalities at higher rate compared to expressing wild-type *HSPB8* mRNA-injected and uninjected fish. Furthermore, it revealed that these abnormal fish had severe muscle degeneration and protein aggregation. Our data suggest that the