ences of the low quality of childhood rearing on adulthood presenteeism via trait anxiety and depressive rumination. Therefore, assessing the quality of childhood rearing, trait anxiety, and depressive rumination may help to elucidate the causes of presenteeism in the workplace and how to combat it.

1-4.

Mediating Effects of Trait Anxiety and State Anxiety on the Effects of Physical Activity on Depressive Symptoms

（大学院博士課程 4 年精神医学分野）
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【Background】 Previous studies have reported that physical activity can prevent the onset of depression and reduces anxiety. In the present study, the hypothesis that total physical activity time influences depressive symptoms via state and trait anxiety was tested by a path analysis.

【Methods】 Self-administered questionnaires were used to survey 526 general adult volunteers from April 2017 to April 2018. Demographic information, physical activity, and state and trait anxiety were investigated.

【Results】 The association between physical activity time and depressive symptoms was expressed as a U-shape curve. The results of the covariance structure analysis showed that differences from the optimal physical activity time（DOT）had direct positive effects on state and trait anxiety. DOT affected depressive symptoms only via trait anxiety, and this was a complete mediation model.

【Conclusion】 The present study suggests that an optimal physical activity time exists for depressive symptoms. The path model demonstrated an association between the three factors of optimal physical activity time, trait anxiety, and depressive symptoms, and the effect was fully mediated by trait anxiety.

1-5.

関節リウマチ患者に対するセファランチン®の薬効評価

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【目的】 関節リウマチ（RA）の治療は、メトトレキサートを第一選択薬とした薬物療法が導入され、完全寛解を目標に行われている。しかしながら効果不十分の症例では、炎症性サイトカインに直接作用する高額な生物学的製剤を併用する。本研究では、健常者、RA 患者を対象に安価で副作用の少ない既存の医薬品であるセファランチン®に着目して同薬剤の薬効評価を試みた。

【方法】 本研究室で独自に開発された免疫抑制薬の薬物感受性試験[1]を用いて健常者と RA 患者を対象にセファランチン®の薬効評価を行った。同法に従って末梢血単核細胞（PBMC）を分離し、T 細胞マイトゲンとしてコンカナバリン A、各濃度のセファランチン®を添加して PBMC 増殖を 50% 抑制する濃度（IC50）を求めた。また Human Inflammatory Cytokine CBA kit を用いて高活動性 RA 患者、低活動性 RA 患者を対象として PBMC が分泌する 6 種類の炎症性サイトカイン（IL-6、IL-8、IL-10、TNF-α、IL-1β、IL-12p70）を測定した。

【結果】 健常者、RA 患者のセファランチン®の薬物感受性については、両群に PBMC 増殖抑制効果が得られたが、有意差は認められなかった。一方、炎症性サイトカイン定量試験では、セファランチン®が低活動性 RA 患者の IL-1β、TNF-α を高活動性 RA 患者の IL-1β、IL-6、IL-8 そして TNF-α を有意に減少させた。

【考察】 セファランチン®は、放射線による白血球減少症や円形脱毛症・粃糠性脱毛症に適応を持つが RA には、適応を持たない。しかしながらセファラ

ンチン®が免疫抑制作用や炎症性サイトカイン減少作用を持つことから RA 患者における臨床応用の可能性が示唆された。

1）　Xu W et al.　Eur J Pharmacol. 2020, 881 : 173232.

2-1.

Plant-derived photorepair system for removing UV-induced pyrimidine dimers in human cells

（社会人大学院博士課程 4 年分子病理学分野）
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Photolyase are enzymes that use blue light energy to remove UV-induced DNA damage, such as cyclobutene pyrimidine dimers（CPDs）and pyrimidine pyrimidines（6-4）（6-4pp）. While photolyase have been identified and studied in various organisms, including bacteria, fungi, plants and non-placental animals, their function in placental mammals, such as humans, remains unclear.

Here, we report the identification of a novel photolyase gene from acerola（Malpighia emarginata DC.）using RNA-seq data. We constructed expression vectors containing the full-length of acerola photolyase coding sequence and transfected them into HEK293 cells to investigate its photorepair ability. After UV irradiation, cells expressing acerola photolyase showed a significant reduction in CPD levels upon subsequent blue light exposure, as measured by ELISA. We also observed a decrease in CPD levels when extracellular vesicle（EV）fractions released from HEK293 cells expressing photolyase were added to recipient cells, although the efficiency was lower compared to direct photolyase overexpression.

Our findings suggest that acerola photolyase has the potential to repair UV-induced DNA damage in human cells, and that photolyase-containing EVs may transfer their photorepair ability to recipient cells. This study provides new insights into the function and potential to be useful in the treatment and prevention of UV-induced damage and related diseases.

2-2.

Clinical features of 55 cases of cytomegalovirus retinitis in Japan

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【Purpose】 Cytomegalovirus（CMV）retinitis is caused by reactivation of latent CMV infection in the host under immunosuppressive conditions. We report the clinical features and outcome of cases of CMV retinitis diagnosed at our hospital.

【Patients and Methods】 We retrospectively reviewed the medical records and evaluated the patient background, underlying condition, systemic immune status, and visual outcome of 55 patients between 2003 and 2022 at the Department of Ophthalmology, Tokyo Medical University.

【Results】 The mean age at onset of retinitis was 53.4 ± 18.3 years, and male-to-female ratio was 42 : 13. The mean time from onset of ocular symptoms to diagnosis was 100.9 ± 120.7 days. Regarding underlying conditions, 25 patients were HIV-positive, 12 had malignant lymphoma, 6 had diabetes, 5 had leukemia, 4 had collagen disease, 2 had solid lung cancer and breast cancer, respectively, and 4 had other diseases. The median CD4+ T-cell count at onset of retinitis was 96 ± 226.9 cells/μl. The median number of CMV-DNA copies in aqueous humor measured by real-time PCR was 4.1×10^{4} ± 8.0×10^{5} copies/ml. LogMAR values of initial and final visual acuity were 0.47 ± 0.70 and 0.67 ± 0.90, respectively, with no significant difference. The median follow-up period was 15.0 ± 56.7 months.

【Conclusion】 CMV retinitis may develop from a variety of underlying conditions other than HIV infection. As it takes a long time to diagnose the disease from onset, visual outcome is often poor. Early diagnosis as well as effective anti-viral treatment are essential to improve visual outcome.