is biased by the time of the epidemic and regional differences, it is necessary to expand the scope of research and accumulate more cases.

2-6.

Development of a novel alternative method for evaluation of respiratory and skin sensitizing potential of chemicals by differential IL-4 up-regulation in human T cells

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Several in vitro assays to predict the sensitizing potential of chemicals have been developed so far, whereas these animal testing alternatives utilize only the key events 1～3 in the adverse outcome pathway（AOP）for sensitization and cannot distinguish chemical respiratory sensitizers and skin sensitizers. Therefore, we aimed at developing a novel in vitro assay, which can discriminate them by taking advantage of the fundamental differences between their modes of function ; development of helper T（Th）2 immune responses, which are critically important for respiratory sensitization. To fulfil the purpose, we recently established a new 3-dimentional（3D）dendritic cell（DC）coculture system consisting of human airway epithelial cell line, immature DCs derived from human peripheral $CD14^+$ monocytes. In the present study, we have been trying to establish a new 2-step DC/T coculture system by further introducing T cells in the DC coculture system, in which the key event 4, that is T cell, can be used as a marker. First of all, when peripheral $CD14^+$ monocyte-derived immature DCs or immature DCs derived from $CD14^+$ monocyte cell lines established by introducing genes related to the cell cycle and survival and primary allogenic naive $CD4^+$ T cells were used, selective mRNA up-regulation of Th2 marker IL-4 was observed by the stimulation with respiratory sensitizers 5 days after the stimulation. Finally, when allogenic Th2 cell lines established by repetitive stimulation of allogenic $CD4^+$ T cells with DCs were used instead of primary naive $CD4^+$ T cells, selective mRNA up-regulation of IL-4 was observed by the stimulation with respiratory sensitizers 24 hours after the stimulation. Furthermore, Up-regulation of IL-4 at protein level was detected by ELISA 48 hours after the stimulation. Currently, we are still continuing to improve this 2-step DC/T coculture system.

3-1.

Quality of Life Evaluation of Nivolumab in Recurrent and Metastatic Head and Neck Cancer

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【Objective】 Nivolumab, an immune checkpoint inhibitor, became available in Japan on March 24, 2017, for head and neck cancer with recurrence or distant metastasis. The global phase III Checkmate-141 trial showed a significant overall survival（OS）benefit in Nivolumab over the control arm of anticancer agents and Cetuximab in platinum-resistant recurrent or metastatic head and neck cancer. Nivolumab is expected to further prolong survival in head and neck cancer patients with poor prognosis and improve Quality Of Life（QOL）compared with the traditional treatment. However, few reports have investigated the QOL benefits of Nivolumab in recurrent or metastatic head and neck cancer. Therefore, we conducted a retrospective study of Nivolumab focusing on QOL in patients with recurrent or metastatic head and neck cancer.

【Patients and Methods】 From May 1, 2017, to December 31, 2021, we included 70 patients with recurrent metastatic head and neck cancer who received Nivolumab at the Department of Otolaryngology and Head and Neck Surgery, Tokyo Medical University Hospital. The primary endpoint was the QOL score, and secondary endpoints were OS, progression-free survival（PFS）, and adverse events. the Kaplan-Meier method.

【Results】 There was no significant decline in QOL before or after nivolumab treatment. Median OS was 17.6 months and the 1-year OS rate was 77.3%. Median PFS as 4.3 months and the 1-year PFS rate was

30.5%.

【Conclusion】 Nivolumab in recurrent or metastatic head and neck cancer has the potential to maintain good outcomes while preserving QOL.

3-2.

Infiltration of fibrosis- and tumor-associated macrophages on lung cancer with idiopathic pulmonary fibrosis

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【Background】 Idiopathic pulmonary fibrosis（IPF）is associated with an increased risk of lung cancer, and lung cancer with IPF is poor prognosis. The pathophysiological mechanism is unknown that lung cancer and pulmonary fibrosis coexist in the patients. We investigated the pathophysiology with infiltration of fibrosis- and tumor-associated macrophage（FAM and TAM）on lung cancer with IPF.

【Method】 Among 175 primary lung cancer cases under surgery from 2016 to 2018, 26 cases were made histopathological diagnosis as lung cancer with IPF. Nineteen cases were enough areas for the interpretation of immunohistochemistry（IHC）staining between normal lung tissue, carcinoma and fibrosis areas. IHC antibodies were CD206, CD163, CD68, S100A4 and CD204 to evaluate infiltration of macrophages. A case was simultaneous bilateral lung cancer with IPF, and each tumor with different progression was evaluated by infiltration of macrophages.

【Result】 In CD206, S100A4 and CD204, the infiltration in fibrosis was high frequency than that in normal lung and carcinoma（FAM）. The normal lung had higher infiltration than carcinoma in CD206 and CD204. The infiltration of CD206 and CD68 was 100% in carcinoma（TAM）. In normal lung, the advanced lung cancer cases had significant higher infiltration of FAM than the early stage cases. In the case of simultaneous bilateral lung cancer with IPF, the normal lung on the lobe with rapid growth cancer had FAM infiltration.

【Discussion】 It was suggested that the exacerbation of lung fibrosis as FAM infiltration influenced the progression of lung cancer.

3-3.

27-hydroxycholesterol promotes proliferation of non-small cell lung cancer as a selective estrogen receptor modulator

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【Introduction】 An oxysterol, 27-hydroxycholesterol（27HC）has been reported to promote the proliferation of breast cancer cells as selective estrogen receptor modulator（SERM）. We hypothesized that the 27HC may also promote the proliferation of lung cancer cells, because 27HC is mostly produced in alveolar macrophages by metabolizing of cholesterol through cytochrome P450 27A1（CYP27A1）in vivo. This research evaluated the relationship between 27HC content and the pathology in lung cancer tissue, and the effect of 27HC on the proliferation of cultured lung cancer cell line（H23）.

【Method】 In the tumor and nontumor regions of lung tissue collected from 25 patients with non-small cell lung cancer（NSCLC）who underwent surgery, we compared 27HC content and its synthetic and catabolic enzyme ex-