Comprehensive assessment including willingness of using long term Oxygen at home, financial status, ability of operating and maintaining home Oxygen concentrator, relevant family support and potential technical difficulties about home Oxygen information; Also, tailor-made education (including hours of using home Oxygen, fire hazard, personal hygiene, physical hazard, life style modification that complies home oxygen therapy, smoking cessation, vaccination and their benefit on survival and exercise capacity) were given. Nevertheless, the above-mentioned assessments could not be conducted to the care-taker directly due to the "No visit" policy established by Hospital Authority during Coronavirus pandemic period. Therefore, the nurses could only complete the assessments via phone to provide home use Oxygen therapy information. The baseline overnight oximetry would be arranged before patients discharge. Follow-up overnight oximetry would be normally arranged two to five weeks after the patients were discharged. If abnormal report was detected through tele-monitoring method in between, the subject officer would arrange earlier follow-up treatment. This can make patient in need can receive the medical care timely.

P1-95 | It runs in the family: case series of severe and critical COVID-19 in three family members

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We report three cases of blood related family members who developed severe and critical COVID-19. All of the family members were male and had the same blood type A, Rhesus positive. The two older members had hypertension as comorbidity. The youngest member had no comorbid condition except for obesity as a risk factor for severe disease. Two of the members (eldest and youngest) had body mass index (BMI) classified as overweight and obese. Studies have shown factors predisposing certain people to severe and critical COVID-19 like older age, certain comorbidities like cardiovascular disease, diabetes, chronic respiratory disease, cancer, and obesity. Some genetic factors were also link to severe and critical COVID-19, for example the increase predisposition of patients with blood type A or AB to severe and critical COVID and presence of receptors like ACE2, TMPRSS2, sialic acid receptors, and CD147 which mediate viral entry to host cells. In this case series, risk factors observed were older age > 50 years old, hypertension, male gender, blood type A, and obesity which might contributed to severe and critical COVID-19 in this family cluster. Unfortunately the two older members of this family died of the disease and its complications. Only the younger member with less risk factors survived.

P2: Cell and Molecular Biology

P2-1 | Antifibrotic effect of lung-resident progenitor cells with high aldehyde dehydrogenase activity

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Rationale: Aldehyde dehydrogenase (ALDH) is highly expressed in stem/progenitor cells in various tissues, and cell populations with high ALDH activity ($ALDH^{br}$) are associated with tissue repair. However, little is known about lung-resident $ALDH^{br}$.
Objectives: To clarify the characteristics of lung-resident $ALDH^{br}$ and evaluate their possible use as a tool for cell therapy in a mouse model of bleomycin-induced pulmonary fibrosis.
Methods: The characteristics of lung-resident/nonhematopoietic ($CD45^-$) ALDHbr were assessed in control mice. The kinetics and potential use of $CD45^-/ALDH^{br}$ for cell therapy were investigated in bleomycin-induced pulmonary fibrosis. Localization of transferred $CD45^-/ALDH^{br}$ was determined using mCherry-expressing mice as donors.
Measurements and Main Results: Lung $CD45^-/ALDH^{br}$ showed higher proliferative and colony-forming potential with mesenchymal stem cell-like characteristics compared with cell populations with low ALDH activity. $CD45^-/ALDH^{br}$, and especially their $CD45^-/ALDH^{br}/PDGFR\alpha^+$ subpopulation, were significantly reduced in the lung during bleomycin-induced pulmonary fibrosis. Furthermore, mRNA expression of ALDH isoforms was significantly reduced in the fibrotic lung. When transferred in vivo into bleomycin-pretreated mice, $CD45^-/ALDH^{br}$ reached the site of injury, ameliorated pulmonary fibrosis, recovered the reduced expression of ALDH mRNA, and improved survival rate, which was associated with the upregulation of the retinol-metabolizing pathway and suppressed profibrotic cytokines.
Conclusions: Our results strongly suggested that the lung expression of ALDH and lung-resident $CD45^-/ALDH^{br}$ are involved in pulmonary fibrosis. The current study raised the possibility that $CD45^-/ALDH^{br}$ could be a novel and useful cell therapy tool for pulmonary fibrosis.