immunosuppressive drugs. At the time of data cut-off, all subjects who entered OLE completed 12 months of dosing. Nineteen/20 (95%) of subjects experienced at least 1 AE, with 59 AEs occurring among the subjects during the OLE to date. The majority of AEs were mild ($n = 16$, 80%), with 1 severe AE (fatigue) considered unrelated to lenabasum reported. AEs occurring in ≥ 2 subjects were: dermatomyositis worsening, dizziness, fatigue, herpes zoster, nasopharyngitis, nausea, upper respiratory tract infection, and urinary tract infection. No serious AEs related to lenabasum have been reported. Improvement was seen in multiple physician- and patient-reported efficacy outcomes; selected outcomes are presented in Figure 1. Mean (SE) changes from study start at Week 52 in the OLE were: CDASI activity score = -17.6 (SD), Patient Skin Activity VAS = -2.6 (SD); Skindex-29 Symptoms Domain = -21.6 (SD); Patient Itch VAS = -2.8 (SD); Physician Overall Disease VAS = -3.0 (SD); and Patient Pain VAS = -2.3 (SD). Improvements were seen in other efficacy outcomes. 12 subjects had no changes in immunosuppressive drugs during the OLE, 3 reduced chronic steroids, 2 reduced mycophenolate, 3 were switched from methotrexate to mycophenolate, 1 started methotrexate, and 1 had a burst and taper of steroids.

Figure 1. Change from Baseline in Selected Efficacy Outcomes in OLE of Phase 2 Trial JBT101-DM-001

Conclusion: Lenabasum continues to have a favorable safety and tolerability profile in the OLE of the Phase 2 trial JBT101-DM-001 with no serious AEs or study discontinuations related to lenabasum. The CDASI activity score and multiple other physician and patient-reported outcomes improved, although limitations of attributing efficacy to lenabasum in the setting of open-label dosing is acknowledged. These data support further testing of lenabasum for the treatment of DM, and a Phase 3 study of lenabasum in DM has started.

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OP0242

SAFETY PROFILE OF NINTEDANIB IN PATIENTS WITH SYSTEMIC SCLEROSIS-ASSOCIATED INTERSTITIAL LUNG DISEASE AND IDIOPATHIC PULMONARY FIBROSIS

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Background: Nintedanib has been investigated in patients with systemic sclerosis-associated interstitial lung disease (SSc-ILD) in the SENSICIS trial and idiopathic pulmonary fibrosis (IPF) in the INPULSIS trials. These patient populations differ in age, sex, disease characteristics and comorbidities.

Objectives: To compare the safety and tolerability of nintedanib in patients with SSc-ILD and IPF.

Methods: Adverse events that occurred over 52 weeks of treatment in the SENSICIS and INPULSIS trials were assessed descriptively in subjects who received ≥ 1 dose of trial drug.

Results: A total of 576 subjects were treated in the SENSICIS trial (288 nintedanib; 288 placebo) and 1061 in the INPULSIS trials (638 nintedanib; 423 placebo). At baseline, mean (SD) age was 54.0 (12.2) and 66.8 (8.0) years in SENSICIS and INPULSIS, respectively. The proportion of males was 24.8% and 79.3%, respectively. Over 52 weeks, 19.4% and 10.8% of patients treated with nintedanib and placebo discontinued treatment in SENSICIS, compared with 24.5% and 18.9% of patients treated with nintedanib and placebo in INPULSIS. Gastrointestinal adverse events were the most frequently reported adverse events with nintedanib and, as expected based on the underlying disease, were more frequent in patients with SSc-ILD than IPF in both treatment groups (Table). Diarrhoea adverse events were reported in 75.7% and 31.6% of patients treated with nintedanib and placebo in SENSICIS, and 62.4% and 18.4% of patients treated with nintedanib and placebo in INPULSIS, respectively.

	SENSICIS	INPULSIS
	Nintedanib (n=288)	Placebo (n=288)
Diarrhoea	218 (75.7)	91 (31.6)
Nausea	91 (31.6)	59 (20.5)
Vomiting	71 (24.7)	30 (10.4)
Nasopharyngitis	34 (11.8)	49 (17.0)
Cough	34 (11.8)	85 (29.5)
Upper respiratory tract infection	27 (9.4)	42 (14.6)
Decreased appetite	27 (9.4)	42 (14.6)
Abdominal pain	20 (7.0)	21 (7.3)
Flatulence	20 (7.0)	21 (7.3)
Constipation	20 (7.0)	21 (7.3)
Progression of IPF*	0	0
Death	0	0

*Data shown are n (%) of patients with ≥ 1 such event. †Data shown are adverse events reported in $\geq 10\%$ of patients in any of the treatment groups shown. Adverse events are listed by preferred term in the Medical Dictionary for Regulatory Activities (MedDRA). *Corresponds to MedDRA term "IPF" which included disease worsening and acute exacerbations.

Conclusion: The safety and tolerability profile of nintedanib in patients with SSc-ILD is similar to that observed in patients with IPF.

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OP0243

EFFICACY OF PIRFENIDONE IN SYSTEMIC SCLEROSIS RELATED INTERSTITIAL LUNG DISEASE – A RANDOMISED CONTROLLED TRIAL

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Background: Interstitial lung disease (ILD) is a major cause of morbidity and mortality in systemic sclerosis (SSc). (1) Lung fibrosis in systemic sclerosis shares

similar pathogenesis as idiopathic pulmonary fibrosis.(2) Pirfenidone slows the decline in lung functions in idiopathic pulmonary fibrosis.(3) Therefore, pirfenidone may be efficacious in SSc-ILD.

Objectives: To compare the efficacy and safety of pirfenidone with placebo in SSc-ILD.

Methods: This was a double-blind, randomised, placebo controlled trial. We enrolled 34 consecutive subjects of SSc-ILD with forced vital capacity (FVC) >50% of predicted value and diffusing capacity of lung for carbon monoxide > 30% of predicted value. Subjects were randomly assigned in a ratio of 1:1 to receive either pirfenidone (n = 17) or placebo (n = 17) and followed up for 6 months. Pirfenidone was started at 600 mg/day and increased to 2400 mg/day over one month and continued for the trial period. Primary outcome was to compare the proportion of patients with stabilisation or improvement in lung functions (FVC). Secondary outcome was to compare the change in FVC, Mahler's dyspnea index, 6 minute walk distance (6MWD), modified Rodnan skin score (MRSS) and change in serum levels of tumour necrosis factor α (TNF- α) and tissue growth factor β (TGF- β) at the end of 6 months. Trial was registered with clinical trials registry of India (CTRI/2018/01/011449).

Results: By intention-to-treat analysis, 16 (94.1%) patients in treatment group showed stabilisation of lung function compared to 13 (76.5%) in control group (p = 0.335). The median change in FVC was -0.55% (IQR = -4.75% to 1.75%) and 1.0% (IQR = -8.5% to 5%) in the treatment and control groups respectively (p = 0.654). The median change in 6MWD was -15 (IQR = -42.5 - 13.75) meters and 0.0 (IQR = -50 - 30) meters in treatment and control groups respectively (p = 0.601). The median of focal scores for transitional dyspnea index in both the treatment and control groups were 3.0 (IQR = 0 - 3) (p = 0.838). Median change in MRSS was 0.0 (IQR = -2.0 - 1.0) and -1.0 (IQR = -4.0 - 0.0) in treatment and control groups (p = 0.828). Difference in TNF- α levels were -5.14 (IQR = -14.6 - 0.29) pg/ml in the treatment and -2.94 (IQR = -5.51 - -2.35) pg/ml control group (p = 0.918). Difference in TGF- β levels in the treatment and control groups were -186.73 (IQR = -731.43 - -64.6) pg/ml and 24.29 (IQR = -233.21 - 362.0) pg/ml respectively (p = 0.093). The mean tolerated dose of pirfenidone was 1700 $\pm$ 644 mg/day. Adverse events were mild, most common among them were gastrointestinal followed by skin rashes. Only one serious gastrointestinal adverse effect was documented.

Conclusion: We failed to demonstrate a beneficial effect of pirfenidone over placebo in stabilising FVC, functional status, or skin disease after 6 months of therapy. A larger study with longer follow up period may be further required.

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OP0244 EFFICACY AND SAFETY OF LOW-DOSE IL-2 IN PATIENTS WITH MULTIPLE MYOSITIS/ DERMATOMYOSITIS

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Background: Dermatomyositis (DM) and polymyositis (PM) are rare chronic inflammatory disorders with significant associated morbidity and mortality despite treatment [1, 2], characterized by subacute onset of proximal muscle weakness, elevated muscle enzymes, and inflammatory infiltrates on muscle biopsy. Although several hypotheses have been proposed for triggers of inflammation in the diseases [3], growing evidences have focused on the immune disorders [4]. However, the quantitative changes of lymphocyte subsets in DM/PM are unclear and whether low-dose IL-2 could rebalance the lymphocyte subsets and further benefit to remission disease activity of DM/PM patients is unknown.

Objectives: To investigate the quantitative status of peripheral blood lymphocyte subsets in the patients for the exploration of pathogenesis and evaluate the safety and efficacy of low-dose IL-2 therapy in patients with DM/PM.

Methods: From February 2016 to October 2018, total 147 patients with PM/DM and 128 gender and age matched healthy individuals were enrolled in this study. The absolute numbers of T, B, NK, CD4+T, CD8+T, Th1, Th2, Th17 and Treg cells in peripheral blood of these individuals were detected by flow cytometry combined with standard absolute counting beads. Patients in IL-2 group (n=31) were not only given traditional treatments, but injected subcutaneously human IL-2 (aldesleukin) at 50 WIU per day for a 5-day course. The demographic features, clinical manifestations and laboratory indicators were compared before and after the treatment.

Results: Patients with PM/DM had lower levels of Treg cells as well as T, CD4+T, CD8+T, Th1, Th2, and Th17 compared with those of the healthy controls (P < 0.05), which was correlated with disease activity (P < 0.05). After IL-2 administration, the absolute numbers of peripheral lymphocyte subsets in patients were significantly increased (P < 0.05), leading to a better remission compared with the patients received conventional therapy (P < 0.05).

Figure 1: Comparison of absolute numbers of peripheral lymphocyte subsets between patients with PM/DM (n=147) and healthy controls (n=128). All the lymphocytes subpopulations were analyzed by detected by flow cytometry combined with standard absolute counting beads. Data were presented as mean $\pm$ SD and statistical analysis was determined by two-tailed unpaired *t*-test. Patients had lower levels of T, NK, CD4+T, CD8+T, Th1, Th2, Th17 and Treg cells in PB compared with those of healthy controls. *P < 0.05, **P < 0.01, ***P < 0.001.

Figure 2: Changes of peripheral lymphocyte subsets after different treatments (n=31). Absolute numbers of T, CD4+T, CD8+T, Th1, Th2, Th17 and Treg cells in patients were significantly increased after treatment. *P < 0.05, **P < 0.01, ***P < 0.001.

Conclusion: The difference status of peripheral lymphocyte subsets, especially Tregs, between PM/DM patients and healthy individuals suggests that lymphocyte subsets may be involved in and play an important role in the pathogenesis of patients. Low-dose IL-2 can effectively increase the level of Treg cells as well as other lymphocytes to some degree and maintain the immunologic balance, which may help for PM/DM patients' symptoms remission without over-treatment and evaluated side effect. But long-term benefits of IL-2 therapy are required to further study.

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