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Title: Mesenchymal stem cells from adipose tissue reduce bleomycin-induced lung remodeling in late stage

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Body: Bleomycin (BLM) model is useful to identify new therapeutic targets. Mesenchymal stem cells (MSC) can modulate inflammatory and immune response. However, the long-term effect of MSCs could increase fibroblast and collagen. To determine the therapeutic effects of MSC from adipocyte on lung remodeling in late stage, wistar mice were treated with (BLM-W, n=14) intratracheal BLM (1,5U/kg) or (CTR-W, n=15) saline. At 14d 1x10⁶ MSCs were infused into half of placebo (CTR-MSC, n=14) and BLM-treated mice (BLM-MSC, n=15). MSCs were selected by adhesion, CD90 expression and differentiation into 3 lineages. At 28d all mice were sacrificed and body weight, saturation index (SI), macroscopic aspect (MA) were measured. HE and Picro-sirius Red were stained. Quantification and image analysis was performed by two double-blind pathologists following a stereological method. BLM-MSC mice showed a reduction in lung fibrosis compared with BLM-W mice (fig1). Damaged lung structure with contiguous fibrotic masses in BLM-W were replaced after MSC therapy by focal fibrotic walls. Weight gain, SI and MA were improved BLM-MSC (p=0,05). Collagen fibers were decreased in BLM-MSC in compared to BLM-W (1.5+/-0.1X5.9+/-0.4;p=0.0005). Surprisingly, collagen fibers in CTR-MSC were slightly reduced compared to CTR-W (1.2+/-0.1X1.6+/-0.1;p=0.04). MSC is an effective therapy to decrease collagen expression and may contribute to a new therapeutic targets.