2.11 Dapagliflozin in Idiopathic Pulmonary Fibrosis: Investigating its effect on fibrosis and inflammation

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Background: Idiopathic pulmonary fibrosis (IPF) affects approximately 3 million people globally with 1300 cases in Northern Ireland. Lung injury leads to release of pro-inflammatory and fibrogenic mediators which activate fibroblasts leading to poor lung function. Dapagliflozin reduces inflammation in airway epithelial cells, but its effectiveness in controlling IPF fibroblasts is unknown. **Aim:** To investigate the direct effect of Dapagliflozin on inflammation and collagen deposition from lung fibroblasts from patients with active IPF and age/sex-matched controls (HC). **Methods**: Primary fibroblasts were exposed to hypoxia (6h, 1%O_2) and normoxia in the presence and absence of TGFβ_1 (5ng/mL) and Dapagliflozin (0–10μM). Release of inflammatory IL-6/8 (ELISA), and ECM (Picrosirius Red) were determined.

Results: Collagen deposition and IL-6 release (pg/mL) peaked 48h after TGFβ1 stimulation. Hypoxia generally delayed the response. Dapagliflozin dose-dependently reduced TGFβ_1-induced collagen from HC (hypoxia, normoxia) and IPF fibroblasts (normoxia). IL-6 release was reduced by Dapagliflozin pretreatment (normoxia), IL-8 remained unaffected. **Conclusions**: In this first study investigating the direct effect of Dapagliflozin on pulmonary fibroblasts, while higher sample numbers are required, our data suggest that Dapagliflozin may slow down pulmonary fibrosis in IPF. **Disclosures: Funding:** CA was funded by BALR/Pulmonary Fibrosis-Northern Ireland. **Conflict of Interest:** The authors declare no conflict of interest.