Subcutaneous to Intravenous Prostacyclin Analogue Transition in Pulmonary Hypertension

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BACKGROUND AND PURPOSE: Prostacyclin analogues are FDA-approved therapies for the treatment of Pulmonary Arterial Hypertension (PAH). They can be administered by inhalation, intravenous (IV) or subcutaneous (SQ) routes. On certain occasions, the route of administration needs to be changed. SQ and IV treprostinil are bioequivalent but not SQ treprostinil and IV epoprostenol. Since there is limited data to guide the transition between SQ to IV prostacyclin analogues, we describe our experience.

METHODS: We performed a retrospective chart review of PH patients diagnosed by right heart catheterization who underwent transition from SQ to IV prostacyclin analogues. Up-titration of IV treprostinil was stopped either when achieving the SQ dose or the development of adverse effects. Up-titration of IV epoprostenol was stopped at a predetermined level or when side effects developed. We collected data on the titration method used and on a variety of clinical, functional and echocardiographic parameters for up to a year after the switch.

RESULTS: We included 9 patients in this retrospective study with mean age of 51 ±14 years and 67% women. NYHA class ranged from 2-4. Etiology of PH was idiopathic (n=4, 44%), connective tissue associated (n=2, 22%), portopulmonary (n=1, 11%) and CTEPH (n=2, 22%, 1 treated before surgery and 1 considered inoperable). Reasons for SQ to IV switch were site pain (n=6, 67%), major surgery (n=2, 22%), circulatory shock (n=1, 11%). SQ treprostinil was converted to IV treprostinil (n=5, 56%) or IV epoprostenol (n=4, 44%). When SQ treprostinil was converted to IV treprostinil the initial dose decreased from 84.9 (range: 36.5-167) to 70.8 (24-114) ng/kg/min. When SQ treprostinil was converted to IV epoprostenol, the dose decreased from 24.5 (17.5-30) to 13.3 (9-20) ng/kg/min. The patient that was converted from SQ to IV treprostinil due to circulatory shock died during the hospitalization. No deteriorations were observed in the other patients during the first year.

CONCLUSION: SQ treprostinil was transitioned to IV treprostinil or epoprostenol without complications.

CLINICAL IMPLICATION: Transition from SQ to IV prostacyclin analogues can be done safely. Some dosing down-adjustment was needed in most patients switched from SQ to IV.

REFERENCES: