34. A CASE OF MYTOMYCIN-C INDUCED PULMONARY VENO-OCCLUSIVE DISEASE

Thibault J; Patel S
Salt Lake City VA Medical Center, Salt Lake City, UT

CASE: 59 year old male with a history of anal cancer treated with concurrent chemoradiotherapy, utilizing 5-FU and mitomycin-C presented with shortness of breath two months after completion of treatment. He was found to have a new 15 liter/min oxygen requirement. CT angiogram revealed upper lobe emphysema, an enlarged right heart, septal thickening, and bilateral pleural effusions. An echocardiogram showed right heart strain and a PASP of >55mmHg. Cardiac catheterization showed mean PAP of 35mmHg, PVR 5.6 WU, CI of 3.39, and PCWP 9mmHg. V/Q scan showed no perfusion deficits. PFTs revealed a profoundly low DLCO of 39% predicted but no evidence of obstruction.

DISCUSSION: Pulmonary veno-occlusive disease (PVOD) is a rare and often rapidly fatal cause of pulmonary artery hypertension (PAH). It has been postulated that PVOD arises after an inciting event of endothelial injury that leads to fibrosis of pulmonary venules. PVOD is distinguished from other subtypes of PAH by the presence of CT findings (septal thickening, pleural effusions, and centrilobular ground glass opacities), dramatic oxygen requirements, low DLCO, and unresponsiveness to typical PAH treatments.

Mitomycin-C has been identified as a causal agent in PVOD. In a French registry, seven cases of mitomycin-C-induced PVOD were identified in patients with anal cancer.[1] The same group showed that intraperitoneal injections of mitomycin-C induced PAH in rats. Those treated with higher cumulative doses of mitomycin-C had more severe PAH, suggesting this may be dose dependent. Our patient was treated based on the RTOG 98-11 trial where mitomycin-C 10mg/m2 is given on days 1 and 29. The original Nigro regimen utilizes mitomycin-C 10-15 mg/m2 on day 1 only. Whether or not the incidence of PVOD differs between these two regimens is unknown given the paucity of data and low reported incidence of this toxicity. Regardless, PVOD is an important complication of mitomycin-C that clinicians should be aware of and diagnose promptly.

REFERENCES:

1. Perros F, et al. Mitomycin-Induced Pulmonary Veno-Occlusive Disease. Evidence From Human Disease and Animal Models. Circulation. 2015;132:834-847