Gender affirming hormone therapy does not increase complication risk for operatively treated ankle fractures

Introduction: The medical disparities faced by transgender individuals is substantial, and there is minimal literature surrounding the orthopaedic care of the transgender patient. The key hormones implicated in gender affirming hormone therapy (GAHT), estrogen and testosterone, have known effects on bone physiology and metabolism. The effects of GAHT on complications after fracture surgery, however, have not been evaluated.

Methods: A retrospective review using PearlDiver technologies (Colorado Springs, CO) database was conducted. Inclusion criteria were as follows: age 19-59, the presence of an operatively treated ankle fracture, those taking either estrogen or testosterone consistent with GAHT within a one year of operative fixation based on their respective birth assigned sex. Rates of surgical and medical complications in these group were compared to controls. Birth assigned sex women on testosterone (BAST) were compared to birth assigned sex women not on testosterone. Birth assigned sex men on estrogen (BASE) were compared to birth assigned sex men not on estrogen. Regional and annual trends were calculated.

Results: These patients demonstrated no significant difference in rates of fracture nonunion, wound complication, or infection (p>0.05). BAST patients had a decreased rate of implant complication (p=0.027) and minor medical complications (p< 0.001) compared to controls. There were no significant differences between those on GAHT and the control groups regarding major medical complications. Both BAST and BASE groups of patients demonstrated an increasing trend in volume over the 10-year period.

Discussion: Orthopaedic providers will encounter more young patients on GAHT. This population does not demonstrate clinically significant increased risk of ankle fracture surgery compared to a control population. Providers can counsel these patients that hormone therapy does not complicate ankle fracture surgery and can proceed with indicated concern without bias or concern for additional risk. Consideration of these data should remove a potential contributor to health care disparities for patients undergoing GAHT.