Materials and Methods: We conducted a chart review of trans feminine and trans masculine patients actively engaged in care in the Mount Sinai Health System (*n = 4030*) and identified 23 individuals (0.5% of the cohort) with a history of VTE. 17 were using E2 (0.8% of E2 users), 3 were using T (0.3% of T users) and the remaining 3 were not on GAHT (0.4% of those not on GAHT). We compared the +VTE group to the remainder of the cohort by examining the proportion of individuals in each group with specific comorbidities and demographic variables.

Results: We identified a higher proportion of VTE in Black individuals compared to white (*1.3% vs 0.5%, p < 0.*05) and in those with public insurance compared to private (*0.9% vs 0.4%, p < 0.*05). The mean age of the +VTE group was higher than the -VTE group (*46.8 vs 31.4 years, p < 0.05*). A greater proportion of individuals in the +VTE group had hyperlipidemia (HLD), HIV, and hypercoaguable conditions (HC) compared to the -VTE group (*p < 0.05*). Compared to those using T, a greater proportion of E2 users had hypertension (HTN), HLD, HIV, and HC (*p < 0.05*). Higher proportions of VTE were observed amongst E2 users with either HTN, HLD, diabetes mellitus (DM), or HC when compared to their counterparts on E2 without the respective comorbidity (*p < 0.05*). In T users, HC was the only comorbidity associated with an increased proportion of VTE (*p < 0.05*). A multivariate regression analysis of all variables that were associated with an increase in proportion of VTE in univariate analysis found that age, Black race/ethnicity, HLD, and HC remained significant (*p < 0.05*). Notably, neither the route of administration of GAHT nor serum levels of E2/T were associated with VTE risk on multivariate regression.

Conclusion: While the prevalence of VTE in our cohort was higher than that of the general population, the risk remains quite small and may be modified by factors unrelated to GAHT. VTE was associated with known VTE risk factors and potential surrogates for social determinants of health rather than exogenous hormone therapy. Black individuals, those who are of advanced age, and those who have HLD or HC may benefit from increased surveillance and efforts aimed at mitigating other modifiable risk factors.

SAT-B2-T2: Not all transfeminine individuals on estradiol can reach both target testosterone and target estradiol levels— time to revisit treatment guidelines?

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Presented by: Nithya Krishnamurthy

Introduction/Background: Both the WPATH SOC 8 and the Endocrine Society recommend targeting serum estradiol (E2) and testosterone (T) levels for feminizing gender-affirming hormone therapy (GAHT) to T < 50 ng/dL and E2 100 - 200 pg/mL to mirror the physiologic range for premenopausal cisgender females.

Specific Aim: We aimed to determine whether optimal T suppression in transfeminine individuals on E2 requires maintenance of E2 levels in the range noted in the reference guidelines. We conducted a comprehensive analysis of patients actively engaged in GAHT in the Mount Sinai Health System and with Plume, a nationwide gender-affirming hormone prescribing service.

Materials and Methods: Individuals who had an active prescription for feminizing GAHT and both T and E2 laboratory results were included (n = 9,921). We stratified the cohort by those with T levels at target <50 ng/dL (n = 5064) and those with T >= 50 ng/dL (n = 4857). We compared the proportion of people in each group with E2 below target < 100 pg/mL (n = 3881), at target 100 - 200 pg/mL (n= 2811), and above target > 200 pg/mL (n = 3229).

Results: Those in the T < 50 ng/dL group had a higher mean E2 than those in the T >= 50 ng/dL group (283.9 vs 131.9 pg/mL, p < 0.001). Of people with E2 levels at target (100-200 pg/mL), 58.3% had T < 50

ng/dL. Additionally, 77% of people with E2 > 200 pg/mL had T < 50 ng/dL, while 24.1% of people with E2 < 100 pg/mL had T < 50 ng/dL. In the T < 50 ng/dL group compared to the T >= 50 ng/dL group, there was a higher proportion of individuals with E2 > 200 pg/mL (49.2% versus 15.2%, p <0.001) and E2 in the 100 - 200 pg/mL range (32.4% versus 24.1%, p < 0.001) and a lower proportion of people with E2 < 100 pg/mL (18.5% versus 60.6%, p < 0.001). Our results indicate that 81.5% of those with T < 50 ng/dL had E2 levels above 100 pg/mL.

Conclusion: Our findings suggest that not all transfeminine patients on GAHT will achieve both T and E2 targets. In order to achieve the desired level of feminization while minimizing risk of adverse events, it may be appropriate to concentrate on achieving one target rather than both. The total testosterone level represents an integrated bioassay reflecting how the patient's body is reading treatment. In our study, 82% of people with T < 50 ng/dL had an E2 level at or above target but nearly 20% achieved a T at goal with a lower E2 level. If avoiding risk associated with higher E2 levels is prioritized, a laboratory goal could be a total testosterone at a preferred level (e.g., < 50 ng/dL), while the estradiol assay would serve as a confirmatory test. Future research should include prospective surveys to assess patient satisfaction at different E2 and T levels. Furthermore, stratification by route of estradiol administration, LH and FSH levels, and use of androgen blockers could help inform treatment guidelines.

SAT-B2-T3: EPIDEMIOLOGICAL INSIGHTS INTO CHRONIC PAIN AMONG TRANSGENDER INDIVIDUALS: EVALUATING ASSOCIATIONS WITH HORMONE THERAPY USE

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Presented by: Tomasz Tabernacki

Introduction/Background: Transgender individuals frequently undergo gender-affirming hormone therapy (GAHT) as part of their gender transition. Though GAHT is crucial for many in affirming their gender, its health implications are incompletely understood. Chronic pain, a leading cause of disability with a multifaceted etiology, has been associated with hormonal changes in previous studies, though mostly in the context of perimenopause. Leveraging the TriNetX database, this study compares the rates of chronic pain in trans patients undergoing GAHT with those who are not, while controlling for many known confounders.

Specific Aim: Our aim is to explore the potential association between GAHT and chronic pain, improving our understanding of the unique healthcare needs within the transgender community and facilitating informed clinical decision-making.

Materials and Methods: From the TriNetX database, encompassing over 120 million patients across 82 hospital systems, we identified four cohorts: trans women either receiving estrogen HT or no intervention (TWHT, TWNI) and trans men receiving testosterone therapy or no intervention (TMHT, TMNI). Inclusion criteria were based on ICD-10 codes indicating transgender status excluding individuals with prior chronic pain diagnoses. Using 1:1 nearest neighbor propensity score matching (PSM) with a caliper of 0.1 standard deviations of the propensity score, cohorts were matched on 24 chronic pain-associated covariates including age, race, preexisting mental health conditions, and lifestyle factors identified after literature review. The primary outcome was the rate of new chronic pain diagnoses determined by ICD-10 codes highly likely to represent chronic pain, compared between hormone therapy and non-hormone therapy groups post-matching. The analysis window began 6 months after start of GAHT or 6 months after first trans ICD-10 code for the HT and NI groups, respectively. Statistical significance was assessed using Kaplan-Meier survival curves and Cox Hazard Analysis.

Results: We identified 40,275 trans men (18,308 HT, 21,967NI) and 33,474 (18,050 HT, 15,424 NI) trans women. Following PSM, cohort sizes were 16,869 (TMHT, TMNI) and 13,806 (TWHT, TWNI) with standardized mean differences between groups of below 0.035 for all covariates.