

# INCREASE IN INSULINE-LIKE GROWTH FACTOR LEVELS DURING CROSS-SEX HORMONE

## TREATMENT IN TRANSGENDER PERSONS



Nienke Nota<sup>1</sup>, Maartje Klaver<sup>1</sup>, Chantal Wiepjes, Marieke Dekker<sup>1</sup>, Annemieke Heijboer<sup>2</sup>, Martin den Heijer<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, Division of Endocrinology, VU University Medical Center, The Netherlands.

<sup>2</sup>Department of Clinical Chemistry, Endocrine Laboratory, VU University Medical Center, The Netherlands. \*Email: n.nota@vumc.nl.

### Background

Sex steroids probably stimulate growth-hormone secretion during puberty, which in turn contributes to the development of gender specific body characteristics. Hypothetically, adequate growth hormone levels in transgender persons are also important to achieve the best therapeutic results. The influence of cross-sex hormone treatment (CHT) at growth-hormone production in adult transgender persons is not yet elucidated.

### Aim

To investigate the influence of CHT on growth-hormone production by the determination insulin-like growth factor (IGF-1) levels.

### Methods

This prospective study includes 89 transgender persons, 43 male-to-female individuals (MtFs) and 46 FtMs (age  $\geq 18$ ) who started with CHT between March 2015 and December 2015. Mt's were treated with cyproterone acetate in combination with estradiol transdermal or oral. FtMs were treated with testosterone transdermal or intramuscular. Serum IGF-1 and IGF binding protein 3 (IGFBP-3) levels were determined at baseline and after three of CHT. IGFBP-3 was determined to calculate the IGF-1/IGFBP-3 ratio to estimate the availability of free IGF-1. IGF-1 was measured using an automated immunoassay (Liaison, DiaSorin) and IGFBP-3 using an ELISA (DRG).

### Results

In both MtFs and FtMs mean IGF-1 levels increased between baseline and three months of CHT (see Figure 1 and 2). Also the mean IGF-1/IGFBP-3 ratio increased in both groups, with 25% (95CI: 17% to 32%) in MtFs and with 28% (95CI: 21% to 37%) in FtMs. At baseline two MtFs had elevated IGF-1 levels (i.e. levels above the upper limit of their age-specific reference range), which increased to 14 MtFs after three months of CHT. The number of FtMs with elevated IGF-1 levels increased from nine at baseline to 19 after three months of CHT.

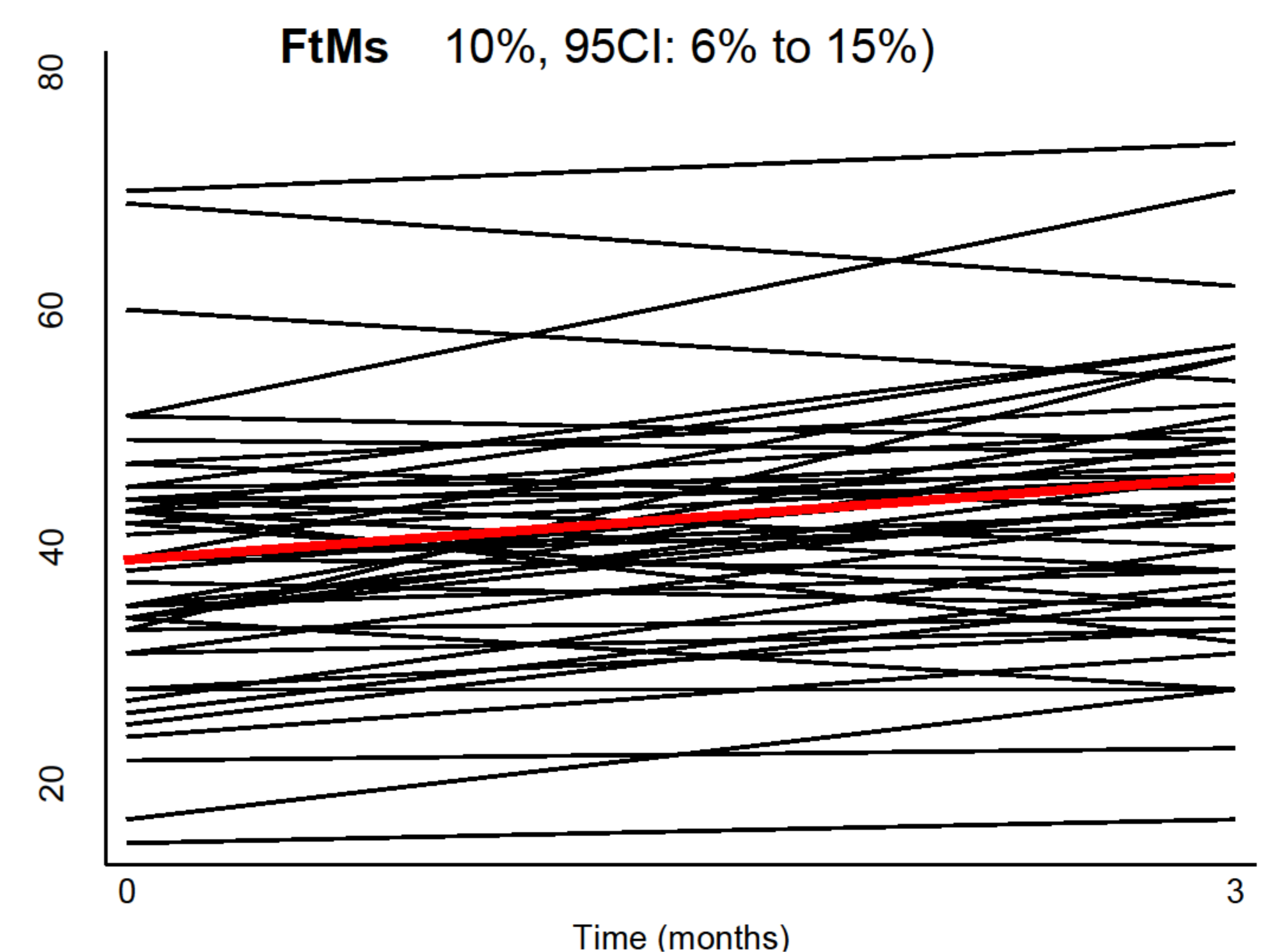
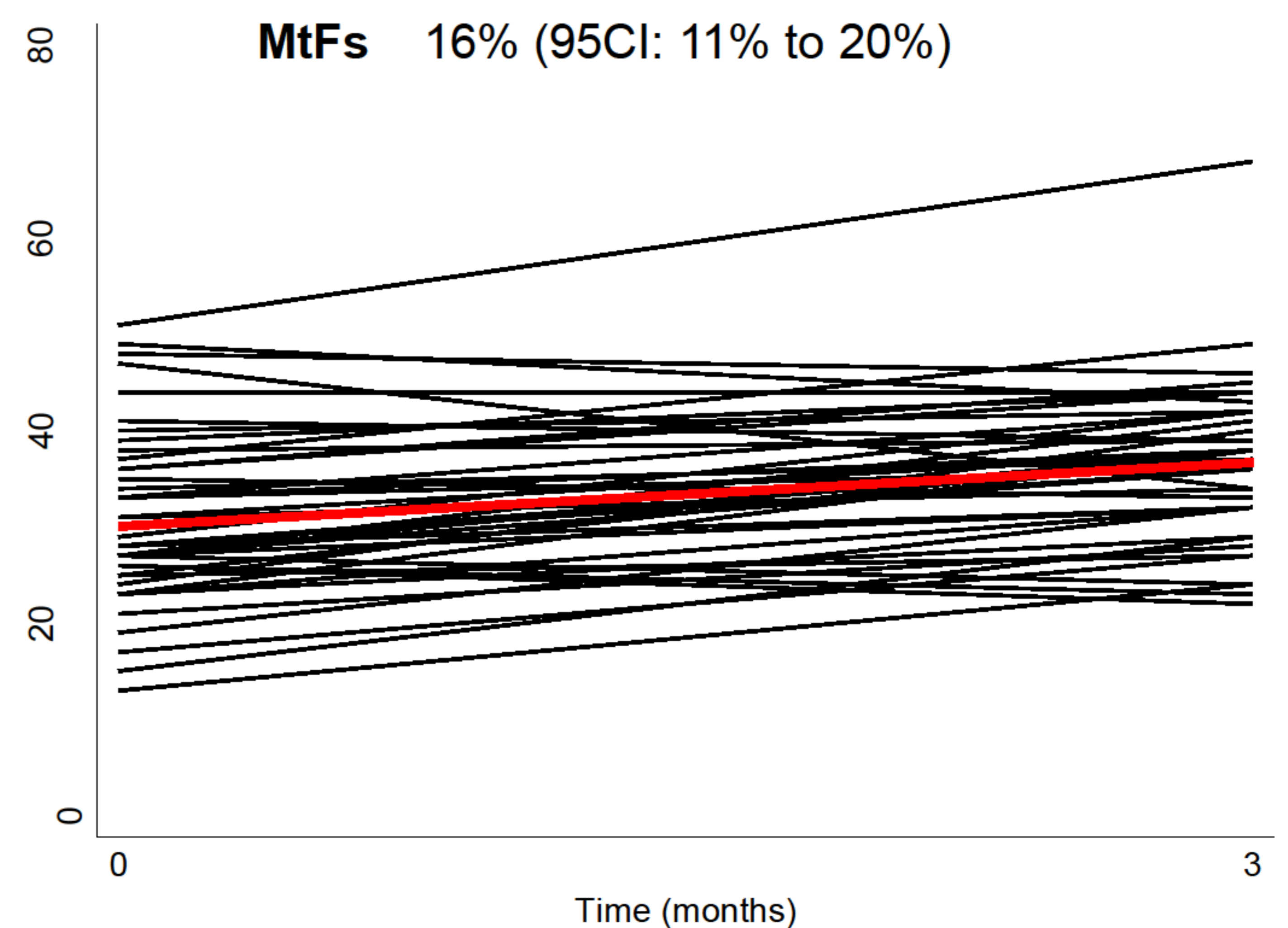


Figure 1 and 2: Changes in IGF-1 levels per individual during first three months of hormone treatment, the red line displays the mean change in IGF-1 concentration.

### Conclusion

In both MtFs and FtMs IGF-1 levels increased moderately during the first three months of CHT.

