



GEN02 - Circulating TGF- β in Marfan Syndrome

OBJECTIVE: To provide human validation of research using mice. Analyzed samples from GenTAC patients with MFS will be used to determine whether concentrations of TGF- β were higher than those from a control group and whether MFS patients treated with losartan had reduced levels of TGF- β .

ORGANIZATION

Lead Investigator: Harry C. Dietz, MD

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DESIGN

- Hypotheses:*
- Circulating TGF- β levels (free and total TGF- β) are elevated in patients diagnosed with Marfan syndrome compared to healthy individuals,
 - Circulating TGF- β levels correlate with aortic root diameters (absolute diameter and z-score) in patients with Marfan syndrome. The z-score represents the standard deviation from the mean aortic diameter normalized for the patient's body-surface area and age.
- Inclusion criteria:*
- Cases - Patients diagnosed with Marfan syndrome according to the Ghent criteria.
 - Controls: no cardiovascular disease or drugs, no cancer, no inflammatory or autoimmune disorders, no diabetes, and no drugs that could affect the extracellular matrix.
- Samples:*
- Cases – 207 plasma samples of patients diagnosed with Marfan Syndrome
 - Controls – 74 plasma samples from healthy controls at the National Institute of Aging
- Data:*
- Patient baseline characteristics including age, gender, height, body weight, aortic root size (echocardiography), co-morbidities, medication

CONCLUSIONS

- Results:*
- The data from the previous research on mice were compared with the GenTAC subjects with Marfan syndrome and healthy individuals without this syndrome. In these subjects, the circulating total TGF- β 1 concentrations were elevated in subjects who had Marfan syndrome compared with control individuals who were healthy.
 - Also, Marfan Syndrome subjects who take the medication losartan or β -blockers showed significantly lower total TGF- β 1 concentrations compared with Marfan syndrome subjects who do not take losartan or β -blockers. This demonstrates that circulating TGF- β 1 concentrations are higher in subjects with Marfan syndrome and will decrease after administration of losartan, β -blocker therapy, or both and therefore might serve as a prognostic and therapeutic marker in Marfan Syndrome.

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