ECHO2D moderate LVH and preserved systolic function. Patient referred her doctor recently increased thyroid medications from 50 to 100 mcg. Instead of presenting with pulmonary embolism, she has hyperthyroidal state causing cardiac failure. Levothyroxine, heparin and Chest CTA scan were cancelled. She was started in Atenolol and diuretics. Patient symptoms improved and was discharged home to be followed in the clinic. After one week, TSH levels were in 0.008mU/L and one month later in 3.032mU/L. She was started in Levothyroxine 50mcg, to maintain patient euthyroid state.

This case illustrates that sometimes tachycardia and tachypnea are symptoms which frequently presents as baffling diagnostic problems. The association of thyrotoxicosis and cardiovascular morbidity is well established. Thyrotoxicosis most common cardiac manifestation is high output heart failure. Patients presenting with heart failure may have thyrotoxicosis as the underlying cause. Treatment of the thyrotoxicosis can restore normal heart function. Hyperthyroidal state may be take into consideration as a differential of tachycardia and tachypnea even if it's not one of the common causes. Awareness of this presentation may help identify patients with reversible dilated cardiomyopathy and other complications.

# Neuroendocrinology and Pituitary
## NEUROENDOCRINOLOGY AND PITUITARY

### Clinical Relevance of Serum Prolactin Levels to Inflammatory Reaction in Male Patients.

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**MON-272**

PRL is a polypeptide hormone that is, in phylogeny, well conserved but elicits various species-dependent functions. PRL is related to the regulation of osmotic pressure in fish and amphibians, fat retention in reptiles and birds, and glucose-lipid metabolism, bone homeostasis and development of the mammary gland in mammals. In humans, PRL secretion is regulated in an inhibitory manner by dopaminergic neurons that project from the hypothalamus to PRL-producing cells in the anterior pituitary gland. Since dopaminergic actions are mainly mediated by D2R, various agents that bind D2R can affect serum PRL levels. In the clinical aspect, hyperprolactinemia is considered in cases with galactorrhea, infertility and sexual dysfunction. Other causes of hyperprolactinemia include hypothyroidism, chronic kidney disease and pregnancy. Also, PRL receptors have been considered as therapeutic targets for some cancers and autoimmune diseases. Given that several pathophysiological functions related to PRL have been recently uncovered, the utility of measuring serum PRL levels could be more widely applicable for a clinical setting. We therefore attempted to reveal the relevance of PRL levels to various clinical parameters in patients who visited a general medicine department. We reviewed medical records of 353 patients whose serum PRL levels were measured in our department during the period from 2016 to 2018. Patients lacking detailed clinical records (n=194) and patients taking medications that affect D2R (n=19) were excluded from this study. Data were analyzed for 140 patients (42 males, aged 49 ± 18 years; 98 females, 45 ± 19 years) in whom various pain and general fatigue were major symptoms at the first visit and in whom hypertension and dyslipidemia were frequently seen in past histories. Average PRL levels were significantly lower in males than in females. The median PRL level in males was 6.5 ng/ml (IQR: 4.2–10.3) ng/ml and that in females was 8.1 ng/ml (5.9–12.9). Patients were divided into two groups depending on whether PRL levels were higher than 10 ng/ml. The group of males with relatively high PRL levels (≥10 ng/ml) had significantly lower levels of serum albumin and higher levels of serum LDH. Of note, there were significant correlations of male PRL levels to erythrocyte sedimentation rate (ESR) (r=0.6), serum LDH (r=0.4) and albumin level (r=-0.5), and TSH/FT4 ratio (r=0.5). On the other hand, female PRL levels were negatively correlated to age (r=-0.2) and serum levels of FSH (r=-0.3) and positively correlated to serum levels of GH (r=0.3). Collectively, the results revealed that PRL levels had gender-specific relevance to various clinical factors. It is notable that PRL levels in males were related to inflammatory status shown by high ESR and low serum albumin and were also associated with a hypothyroid condition.

# Bone and Mineral Metabolism
## NEW FRONTIERS IN BONE AND MINERAL METABOLISM

### The Effects of Hormone Therapy on Premature Ovarian Failure Following Allogenic Hematopoietic Stem Cell Transplantation: A Single-Center Experience

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**OR29-03**

**Background:** With increasing survival rates after hematopoietic stem cell transplantation (HSCT), it has become important to evaluate methods of improving patients' quality of life. Most female patients of childbearing age experience premature ovarian failure after transplantation, which results in decreased quality of life and an increase in fracture risk due to rapid bone loss. We analyzed the effects of hormone therapy (HT) on serum follicle stimulating hormone (FSH), serum estradiol, and bone mineral density (BMD) in young female HSCT recipients. **Methods:** This retrospective cohort study included 234 female patients who underwent allogenic HSCT between April 2009 and April 2018 at our center. The maximum age at the time of transplantation was 40 years, and patients were followed up for at least 3 years. Of the 734 patients who were initially screened, 360 patients aged <18 years and 8 who were transferred to another institution after transplantation were excluded from the study. There were 93 patients who died within 3 years of transplantation, while 30 were lost to follow-up,