

Abstract: Basic Sciences

A Study to Compare the Histology of Fresh versus Embalmed Adult Human Cadaveric Tissue

Athaiya Shashwati, Sushma Kushal Kataria
Department of Anatomy, Dr SN Medical College and Associated Group of Hospitals, Jodhpur, Rajasthan, India

INTRODUCTION

Histology and a deeper understanding of normal human tissue helps in better pathological diagnosis. The relative microscopic dissimilarities and ethical problems associated with surgically derived and animal tissues make them an unsuitable source of histology slides. The study aimed to assess the quality of slides prepared from pre embalmed and post embalmed cadavers to determine which one was able to produce histologically superior slides.

METHODS

A total of 11 tissues viz. skin, adipose tissue, muscles, peripheral nerve, muscular artery, elastic cartilage, spleen, and liver were collected from the pre and post embalmed cadavers. Stained slides were prepared and examined under microscope. Slides were assessed on tissue architecture, cell size, sharpness of the cellular outline, size and position of nucleus, connective tissue state and staining, and absence of features of cell death. Scoring was done based on faculty and student feedback and analyzed.

RESULTS

Overall 55% of faculty and 45% of student feedback considered pre embalmed slides better over post-embalmed. Adipose tissue, smooth and skeletal muscle, and peripheral nerve slides of fresh tissue were considered better by 100% of faculty and most of the students. Further analysis showed better gross cellular and tissue arrangement in post embalmed while finer cellular details were better in pre embalmed slides.

CONCLUSION

Pre embalmed tissue slides showed better cellular and nuclear details, while tissue architecture was better in post embalmed tissue slides.

Levels of Serum Fetuin-A and hs-CRP in Subclinical Hypothyroid and Subclinical Hyperthyroid Subjects

Manjubala Maheriya, GG Kaushik
Department of Biochemistry, JLN Medical College and Associated Group of Hospitals, Ajmer, Rajasthan, India

INTRODUCTION

Subclinical hypothyroidism is a milder form of hypothyroidism characterized by an elevated serum TSH (5 μ IU/ml-10 μ IU/ml) level but with a normal serum FT3 and FT4 levels. Subclinical hyperthyroidism is characterized by mildly low but still detectable serum TSH levels (0.1-0.4 μ IU/ml) or with an undetectable serum TSH levels (<0.1 μ IU/ml). The purpose of the present study was to assess the levels of Fetuin-A and hs-CRP in subclinical hypothyroid and subclinical hyperthyroid subjects.

METHODS

This study was carried out on 65 subclinical hypothyroid and 65 subclinical hyperthyroid subjects and 130 euthyroid controls. Biochemical analytes measured were serum FT3, FT4, TSH, Fetuin-A, and hs-CRP.

RESULTS

The mean serum levels of Fetuin-A and hs-CRP in subclinical hypothyroid subjects were 293.4 \pm 76.5 μ g/ml and 5.43 \pm 4.19 mg/L, in subclinical hyperthyroid subjects were 409.45 \pm 64.56 μ g/ml and 2.16 \pm 1.43 mg/L, and in euthyroid controls were 347.24 \pm 134.52 μ g/ml and 1.61 \pm 1.3 mg/L, respectively. These value were found to be statistically highly significant (p<0.0001).

CONCLUSION

Levels of Fetuin-A were decreased in subclinical hypothyroid subjects whereas they were increased in subclinical hyperthyroid subjects. Levels of hs-CRP were increased in both subclinical hypothyroid and subclinical hyperthyroid subjects.

Study on Blood Cell Count, Hemoglobin, RBC Indices, Serum Calcium, and Phosphorous Level in Primary Hypothyroid Patients

Vikash Choudhary, BK Binawara

Department of Physiology, SP Medical College and Associated Group of Hospitals, Bikaner, Rajasthan, India

INTRODUCTION

Anemia is frequently observed in patients with primary hypothyroidism. Thyroid hormones are also believed to influence calcium and phosphorous metabolism. The study aimed to assess hematological changes and pattern of anemia in primary hypothyroid patients and the influence of hypothyroidism on serum calcium and phosphorous levels.

METHODS

This was a cross sectional study conducted on newly diagnosed 100 patients with primary hypothyroidism, between 18–60 years. They were categorized as 35 patients of subclinical and 65 patients of overt hypothyroidism. Patients were evaluated for hematological parameters and levels of total serum calcium and serum phosphorus.

RESULTS

The overall prevalence of anemia was 56% in patients with hypothyroidism which is higher than the WHO reported data of prevalence of anemia throughout the world. Prevalence of normocytic normochromic anemia was significantly higher. There was no statistical difference between subclinical hypothyroid and overt hypothyroid in term of hematological parameters and type of anemia. Comparison of mean serum calcium and phosphorous levels revealed significant statistical difference between the two study groups (p value = 0.05).

CONCLUSION

The high prevalence of anemia in patients with hypothyroidism suggest screening for hypothyroidism during the differential diagnosis of cases presenting with anemia. A significant decrease in serum calcium and increase in serum phosphorous concentration was found in hypothyroidism patients.

To Study the Levels of Serum Preptin and Serum Amylin in Prediabetes and Type 2 Diabetes Mellitus

Arun Panwar, GG Kaushik

Department of Biochemistry, JLN Medical College and Associated Group of Hospitals, Ajmer, Rajasthan, India

INTRODUCTION

Diabetes mellitus (DM) is a chronic disease characterized by hyperglycemia due to deficiency of insulin or development of insulin resistance. The aim of this study was to recognize possible correlation of levels of serum Preptin and Amylin in patients with prediabetes and type-2 diabetes mellitus (T2DM) as compared to healthy subjects.

METHODS

The study was carried out on 160 prediabetic and type-2 diabetic subjects and 160 healthy controls. Biochemical analytes measured were fasting plasma glucose, homeostatic model assessment of insulin resistance (HOMA- IR), serum insulin, Preptin, and Amylin.

RESULTS

The mean serum levels of Preptin and Amylin in pre-diabetic subjects were 402.5 ± 52.5 pg/mL and 7.4 ± 2.7 pmol/l, respectively. The mean levels of Preptin and Amylin in type 2 diabetic subjects were 423.5 ± 63.5 pg/ml and 8.4 ± 2.9 pmol/l while in healthy subjects these were 392.0 ± 44.2 pg/mL and 4.0 ± 0.6 pmol/l, respectively. These values were found to be statistically highly significant ($p < 0.0001$).

CONCLUSION

Levels of Preptin and Amylin were increased in prediabetic and type-2 diabetic subjects as compared to healthy subjects.