REPORT

Qadir test

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Abstract: The present diagnostic tests for cancers are expensive and are not accessible by poor. Therefore, it was necessary to explore a diagnostic test accessible by general public. Plasma lipid profile is decreased in all the cancers except in breast cancer, where HDL-cholesterol is decreased while the other lipids are increased. Therefore, plasma lipid profile may be used as diagnostic test for malignancy. As general diagnostic procedures, these laboratory parameters (plasma lipids) should also be co-related with the clinical symptoms of the patient and other diagnostic tools.

Keywords: Qadir test, Plasma lipid profile

INTRODUCTION

Clinical pharmacy is an emerging field of pharmaceutical sciences especially in developing countries like Pakistan. Clinical pharmacist actively participates in the management of diseases. The most important concern for management of malignant diseases is their timely diagnosis. If a malignant disease is identified at its earlier phase, it may easily be recovered by using existing methods, like use of chemotherapeutic agents, irradiations and surgery. The present diagnostic tests for the disease are expensive and are not accessible by poor people. Therefore, it was necessary to explore a diagnostic test accessible by general public. Estimation of plasma lipid profile is usually used for the diagnosis of cardiac problems. It has been established that plasma lipid profile is changed in cancer patients, so it can be used for diagnosis of the disease; this is known as Qadir test (Qadir, 2010).

MALIGNANCY & PLASMA LIPIDS

Neoplastic disease indicates a disease of new growth. Fundamental to the origin of all neoplasms is loss of normal growth control. Neoplasms seem to behave as parasites and compete with normal cells and tissues for their metabolic need. A neoplasm is often referred to as a tumor. All tumors have two basic components: The parenchyma; made up of neoplastic cells, and the stroma; Made up of non-neoplastic connective tissues and blood vessels (Robbins *et al.*, 2003).

Neoplasms or tumors may be divided into two categories; benign tumors and malignant tumors. Benign tumors are relatively innocent and remain localized. Malignant tumors are also called cancers and are distinguished from benign tumors by the properties of invasiveness and metastasis (Rang *et al.*, 1999).

Malignant tumors can be further classified as

- Carcinomas (cancers of epithelial cells)
- Sarcomas (cancers of connective tissues)
- Lymphomas (cancers of lymphoid tissues),
- Leukemias (cancers of leukocytes and their precursors)

Lipids are conveyed in blood with the assistance of lipoproteins. Chylomicrons help in transportation of triglycerides from the digestive tract to other cells. VLDLs are implicated in the transportation of triglycerides from the liver to different cells. LDLs are implicated in the transportation of cholesterol from liver to the other cells. HDLs are responsible for the carriage of cholesterol from other cells to the liver. Chylomicrons and VLDLs are quickly metabolized (Heeren 2003). Therefore triglycerides, cholesterol, LDL-cholesterol and HDL-cholesterol represent the Plasma Lipid Profile.

Numerous researches have demonstrated a reverse affiliation among plasma lipid profile and Malignancy (Halton 1998; Allampallam 2009). Cholesterol and triglycerides have quite truly essential physiological control in human cells. Cholesterol upholds physiological as well as anatomical respectability of all natural membranes. It is, in addition, integrated in the movement of membrane bound enzymes and is prime component for stability of the double helical structure of deoxyribonucleic acid (Kovacs, 1990). For carriage in plasma, triglycerides and cholesterol are bundled into lipoproteins, which are then taken up and broken down by cells to satisfy requests for cell workings. Decreased concentrations of blood lipids in cancerous patients might be because of the carcinogenesis. As the carcinogenesis proceeds, more cells are growing; more lipids are being used for their proliferation. Therefore lower concentration

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Table 1: Qadir test, change in plasma lipid profile

	No. of Patients	Triglycerides	Cholesterol	LDL-Cholesterol	HDL-Cholesterol	References
Carcinoma: Breast cancer Ovarian cancer	 80 40	 ↑ ↓	 ↑ ↓	 ↑ ↓	 ↓ ↓	 (Qadir & Malik 2008)
Sarcoma	60	↓	↓	↓	↓	(Qadir *et al.*, 2006)
Leukemia	90	↓	↓	↓	↓	(Qadir *et al.*, 2011)
Lymphoma: Non-Hodgkin	 90	 ↓	 ↓	 ↓	 ↓	 (Qadir *et al.*, 2007)

↑ : Increased ↓ : Decreased (Using Student t-test: $p<0.05$)

of blood lipids, as compared to the normal person, could be utilized as marker of malignancy. As general diagnostic procedures, these laboratory parameters (plasma lipids) should also be co-related with the clinical symptoms of the patient and other diagnostic tools.

QADIR TEST

Effect on plasma lipid profile for each major cancer type is given in table 1. Plasma lipid profile was decreased in all the cancers except in breast cancer. Breast cancer is the most common cancer of man (Robbins *et al.*, 2003). In breast cancer, only HDL-cholesterol was decreased while the other lipids were increased. The increased blood levels of these parameters in patients of breast cancer may be due to high level of lipase in these patients (Qadir & Malik 2008).

CONCLUSION

Plasma lipid profile is changed in cancer patients, so it can be used as diagnostic test for malignancy.

REFERENCES

Allampallam K, Dutt D, Nair C, Shetty V, Mundle S and Lisak L (2009). The clinical and biologic significance of abnormal lipid profiles in patients with myelodysplastic syndromes. *J. Hematother. Stem Cell Res.*, **9**: 247-255.

Halton JM, Nazir DJ, McQueen MJ and Barr RD (1998). Blood lipid profiles in children with acute lymphoblastic leukemia. *Cancer,* **83**: 379-384.

Heeren J, Grewal T, Laatsch A, Rottke D and Rinninger F (2003). Recycling of apoprotein E is associated with cholesterol efflux and HDL internalization. *J. Bio. Chem.*, **278**: 14370-14378.

Kovacs MIP (1990). Determination of cholesterol in pasta products using gasliquid chromatography. *J. Cereal Sci.*, **11**: 291-297.

Qadir MI (2010). A cheap method for diagnosis of cancer. *Pharmacology online Newsletter,* **3**: 186-189.

Qadir MI and Malik SA (2008). Plasma Lipid Profile in Gynecologic Cancers. *Europ. J. Gynecologic. Oncol.*, **29**: 158-161.

Qadir MI, Malik SA, Naveed AK and Ahmad I (2006). Plasma lipid profile in sarcoma patients. *Pak. J. Pharm. Sci.*, **19**: 155-158.

Qadir MI, Naveed AK, Ahmad I and Malik SA (2007). Plasma lipid profile in childhood non-hodgkin Lymphoma Patients. *Pak. Paed. J.*, **31**: 167-170.

Qadir MI, Saleem M, Khalid SH, Malik SA, Massud A, Ali M, Asghar S and Akash MSH (2011). Plasma lipid alterations in leukemia patients. *J. App. Pharm.,* **1**(3): 159-164.

Rang HP, Dale MM and Ritter JM (1999). Cancer Chemotherapy, In: Pharmacology, 4th ed., Churchill Livingstone, Edinburgh. pp.663-684.

Robbins SL, Cotran RS and Kumar V (2003). Neoplasia, *In*: Robbins Basic Pathology, 7th ed., Saunders, Philadelphia, USA, pp.165-210.