



# RAJIV GANDHI CANCER INSTITUTE & RESEARCH CENTRE

*Newsletter*

Vol. XIV

No. 6

Price : 50 Paise

Issue : June 2011

**SECTOR-V, ROHINI, DELHI-85 • Tel. : 47022222 (30 Lines) 27051011-1015, Fax : 91-11-27051037**

## EDITORIAL BOARD :

★ Mr. D. S. Negi (C.E.O.)	★ Dr. P. S. Choudhury	★ Dr. Rupinder Sekhon	★ Dr. Sandeep Mehta
★ Dr. A. K. Chaturvedi	★ Dr. A. Jena	★ Dr. (Col.) A. K. Bhargava	★ Dr. Sheh Rawat
★ Dr. D. C. Doval	★ Dr. S. K. Rawal	★ Dr. N. R. Dutta	★ Dr. S. K. Sharma
★ Dr. Gauri Kapoor	★ Dr. Kapil Kumar	★ Dr. R. S. Jaggi	★ Dr. Amitabh Sandilium
★ Dr. Anurag Mehta	★ Dr. Sunil Kr. Gupta	★ Dr. Pankaj Pande	
★ Dr. S. A. Rao	★ Dr. B. K. Naithani	★ Dr. Vineet Talwar	

**Editor : Dr. A. K. Dewan**

## EDITORIAL

### PROFESSIONAL PRIDE & ORGANIZATIONAL PRIDE

Few days back, I met our Ex-CEO, Dr. Y. P. Bhatia, who is now the Managing Director of Hospital Consultancy, Astron. We generally discussed about manpower problems in hospitals. His slogan has been "Invest in manpower, that is your driving force". I said why people keep changing their working place. Is it for money only? His remarks gave me some consolation. "People at RGCI & RC have professional pride and organizational pride. They are committed and loyal to the institute". These words of encouragement motivated me to write about "Professional Pride and Organizational Pride".

When you are contented with your work because it is important, significant, of high quality and has been performed with expertise and honorably, that means you take pride in your work. It means that you value the purpose and content of your job openly and self – consciously. Your employer appreciates your work, trusts you and recognizes positive sense of your work, you feel pride in your organization.

How do you identify people with professional pride? Employee with professional pride is committed, dedicated, motivated, loyal, involved and enthusiastic. Such employees typically believe in the vision, mission and values of the organization. They develop their rightful place in their organizational cultural fabric. High level commitment in one's job generates an equal level of professional satisfaction. Professional and Organizational pride are the strong motivators of continued commitment to excellence. People with professional pride tend to work harder and enjoy their work, produce better products, provide more effective services. When they feel appreciated, they perform even better. Enthusiasm and loyalty of some persons is infective which then motivates other employees with the sense of purpose and performance. Positivity and enthusiasm is just as contagious as unhappiness and dissatisfaction.

We should cultivate a sense of professional pride. There are three ways of doing this:-

- 1) Take pleasure in doing what you do. If you are not happy at

working place, you may really feel miserable. Think if there is something more productive that you would like to do or want to do but don't know how to do. Try to find alternatives. Find the work you enjoy.

- 2) Be known as a good worker – Do the job so well that your name is synonymous with great worker. Do your work ethically. It is a great praise to have a boss or peer refer to you as great worker. Your jobs and tasks should represent you.
- 3) Go beyond expectations – never say it is not my job or I don't get paid for this. There are many things in life for which you don't get paid but still you do it. If you want to contribute, do something above board or ahead of schedule, you will be seen as a responsible contributor. A good employer will see that you are worth more if you are kept reasonably happy and treated with some respect. He may not always pay you more for your contribution but he keeps you in high esteem.

Look at each project as a challenge and view each new task as another chance to make a difference wherever you work. When you complete something, people should not get disappointed. Take immense pride in your work. Most people don't take pride in their profession? It is probably due to a combination of innate laziness coupled with administrative disconnect with employees. Employer should cultivate a sense of professional pride in employees. If you feel hesitant to talk about your organization or your work, try to evaluate if it is your personal outlook modification or job change that might correct this. Spending half a day at workplace with a sense of pride and accomplishment is preferable to merely working through the day to earn a salary.

If you feel a strong sense of professional pride and enjoy your job, don't change anything. Your career progress should continue on a positive track. **Be proud of what you do and for whom you do.**

**Dr. A. K. Dewan**

Medical Director

**RGCI & RC Newsletter**

June 2011

visit us at : [www.rgci.org](http://www.rgci.org)



## SERUM PSA A DIAGNOSTIC TOOL FOR PROSTATE CANCER FAMILY PHYSICIANS PERSPECTIVE

Prostate cancer constitute a major and escalating international health problem being one of the most common malignancy in men and second most common cause of cancer death. In view of high incidence and poor prognosis associated with advanced stage, the early detection makes a great impact in the management of the patient.

Serum prostate specific antigen (PSA) after its clinical introduction in the late 1980s has emerged as an important diagnostic tool in early detection of carcinoma prostate (CaP). PSA is a single chain glycoprotein with 240 amino acids having a molecular weight of approximately 34 KDa. PSA is synthesized by the epithelial cells of prostatic acini and ducts and is secreted as a normal constituent of seminal fluid. Only a small fraction is detected in the blood.

Serum PSA is a highly specific marker which has been proved to be more sensitive than digital rectal examination and transrectal ultrasonography (TRUS) for the detection of CaP. The determination of serum PSA has become an essential tumor marker for diagnosis, evaluation of treatment and follow-up of the patients with CaP. There is no specific normal cut-off value of PSA. The rise in PSA value is directly proportional to the probability of having CaP. However the accepted reference range for an adult male is 0-4 ng/ml.

In addition to its rise in CaP, there are several conditions which can cause raised PSA levels as noted below:

- 1) Benign conditions such as prostatitis, benign prostatic hyperplasia (BPH), infarction and acute retention of urine.
- 2) Instrumentations such as cystoscopy, catheterization, FNAC or biopsy can cause false elevation and serum PSA estimation should be deferred for 6 weeks after these procedures

PSA is organ specific but not cancer specific. The specificity is compromised especially in the grey zone (4-10 ng/ml) where both CaP and BPH exist. PSA is not a perfect serum tumor marker but it is probably the best we have and refinements have been made to improve its accuracy for timed diagnosis. The following refinements of serum PSA have been proposed:

- 1) **PSA Density (PSAD)**- it is calculated as ratio of serum PSA (ng/ml) to the volume of prostate (cc/gm) by TRUS. The concept of PSAD is supported by the fact that benign tumors grow by expansion while malignant tumors grow by expansion and infiltration. The infiltration will affect the serum PSA without altering the volume. The proposed cut-off value is 0.15 to 0.18 in various studies. Cases with increased value are more likely to be cancerous and cases with decreased value are more likely to be benign. The specificity of PSAD is

significantly higher than the PSA especially in the grey zone, hence helps to select an ideal candidate for the biopsy.

- 2) **Age-specific PSA**- the adjustments are made by lowering the normal range of PSA in young men (cut-off value 2.5 ng/ml for age 40-49 years) while raising the value to 6.5 ng/ml for men ages 70 - 79 years in an attempt to increase the specificity. This concept was based on the assumption that PSA will increase with increased size of prostate due primarily to BPH in men, as they age, thus accounting for higher serum PSA.
- 3) **PSA Velocity**- It is the rate of change of serum PSA over time. The rationale for its use is that PSA rises faster in prostate cancer than in BPH. PSA velocity lacks both sensitivity and specificity, however if it is done PSA values should be measured over a period of minimum 18 - 24 months
- 4) **Free PSA and % free PSA**- Total PSA consists of free PSA and PSA bound to protease inhibitors like alpha 1-chymotrypsin. Complexed PSA is thought to be dominant form in CaP while free PSA constitutes a greater fraction in patients with BPH. In normal subjects complex and free PSA average 80% and 20% respectively. Calculation of % free PSA is done by dividing the free PSA value by total PSA and multiplying by 100. A low percentage of free PSA means a greater likelihood of prostate cancer than higher percentages of free PSA. Number of studies have confirmed that the evaluation of %free PSA is a valuable parameter to discriminate CaP and BPH in patients showing grey zone PSA (4-10 ng/ml). Efforts are made to detect cancer in patients with intermediate or low PSA because 40% of confined CaP is expected to occur in patients with PSA from 4 to 10 ng/ml. Hence, %free PSA aids in distinguishing those subjects who should undergo further testing (biopsy) to ensure that the CaP diagnosis would not be missed and at the same time minimizing the number of non-cancer patients who would need additional testing.

### Applications in clinical practice

- 1) Screening and early diagnosis to detect CaP at early stage for a better prognosis.
- 2) Helps in selection of ideal candidates for biopsy.
- 3) Monitoring treatment response/therapeutic efficacy- Radical prostatectomy should result in undetected PSA levels. Measurable PSA after radical prostatectomy indicates recurrence. This 'biochemical relapse' precedes much before the clinical symptoms.

### Conclusion

Serum PSA is a valuable screening and diagnostic tool for the detection of prostate cancer. PSA based screening and early detection coupled with effective treatment can bring a dramatic reduction in prostate cancer mortality.

**Dr. Sunil Pasricha**  
Specialist ( Pathology)





## OVARIAN CARCINOMA & CA125

### Introduction:

Ovarian cancer is one of the most treatable solid tumors, as the majority of them are sensitive to anticancer therapies. The disease however, has the highest fatality to case ratio of all the gynaecologic cancers. Despite advances in molecular biology, surgery and chemotherapy, carcinoma ovary remains a difficult condition to manage, with hardly any improvement in long term survival rates. The poor prognosis of the disease being attributed to the fact that >70% women present with disease spread beyond the pelvis. Detection of an early stage disease may therefore offer an opportunity to reduce mortality. A reliable means of early detection for carcinoma ovary has not yet been discovered. Numerous serum tumor markers have been investigated in the context of screening, prognosis, monitoring of response and recurrence, with CA125 being the most widely used, often considered the "gold standard".

### What is CA125?

CA125 is an antigenic determinant on a high molecular weight glycoprotein recognised by the murine monoclonal antibody OC125. It is expressed by fetal amniotic and coelomic epithelium and in adult tissues, it is found in structures derived from coelomic (mesothelial cells) & müllerian (tubal, endometrial and endocervical) epithelia. CA125 contains 2 major antigenic domains, namely A & B, which bind the monoclonal antibodies OC125 & M11 respectively. Curiously the surface epithelia of fetal and adult ovaries do not express CA125, except in inclusion cysts and areas of metaplasia. Serum CA125 was originally quantified using a homologous assay based on the monoclonal antibody OC125 alone, which has been replaced by heterologous assay using OC125 as the capture antibody and M11 as the detection antibody. A serum value of 35 U/ml (representing 1% of healthy female donors), is accepted as normal levels, which is an arbitrary cut off and is not ideal in post menopausal women and after hysterectomy. In such cases lower cut offs may be more appropriate (20 U/ml & 26 U/ml respectively)

### CA125 as a screening modality

Serum CA125 for screening could be useful, as the test has been shown to be sufficiently sensitive to detect 50% of carcinoma ovary, when stage I and 90% in stage II.

However, elevated CA125 levels may be associated with other malignancies (pancreatic, breast, lung, colon) & benign gynaecologic condition (endometriosis, adenomyosis, fibroids etc). Use of a combination of markers has given promising results, e.g. CA125>65 U/ml and elevated Tag-72/CA15.3 distinguishes ovarian carcinoma from benign masses with a sensitivity of 73% specificity of 98%.

Another strategy recommended for screening utilizes Risk of Ovarian Cancer (ROC) Algorithm, which incorporates patient age, absolute level & rate of change of CA125. This algorithm utilizes the fact that women with ovarian carcinoma have rising CA125 levels, whereas women without ovarian carcinoma have static or falling levels. In a retrospective analysis, the algorithm yielded a sensitivity of 83%; a specificity of 99.7% and a PPV of 16% for predicting a risk of developing ovarian cancer in the year following her last screen.

### CA125 as a prognostic tool

CA125 is a useful prognostic marker. Patients with preoperative CA125 concentration >450U/ml have a very poor median survival of 7 months, whereas those with concentration < 55 U/ml have a better median survival (23 months).

Post operative serum CA125 levels <65 U/ml & more than 65U/ml are associated with 87% and 30% 2 year overall survival rates respectively (>35 U/ml 87%, >65 U/ml 30%).

During primary chemotherapy half life is an independent prognostic factor, both for achievement of complete remission and for patient survival. The most commonly used cut off is half life of 20 days.

### CA125 as an indicator of response to treatment

Serum CA125 levels predict progression or regression of disease in > 90% patients of carcinoma ovary. CA125 measurements are widely accepted for monitoring clinical course and response to therapy. Response to therapy is defined as a 50% decrease in CA125 after 2 samples, or a serial decrease over three samples of greater than 75%, all samples taken 28 days apart.

### Application of CA125 in detecting recurrence

The most important use of CA125 is in the assessment of patients for recurrence of disease post-oophorectomy. Residual disease is detected in 95% of patient with serum CA125 concentration of >35 U/ml. However a negative result does not exclude the presence of disease.

### Conclusion:

CA125 has proven itself to be a valuable addition to the oncologist's armamentarium in the management of Carcinoma Ovary. Further investigative efforts are required to determine how CA125 may be rationally & optimally employed in new drug development and treatment of patients with persistent or recurrent disease following initial cytotoxic chemotherapy.

**Dr. Anila Sharma**  
Specialist (Pathology)



## Yet Another Milestone.....

It is with great pleasure and pride; we announce the accreditation of hospital laboratory of Rajiv Gandhi Cancer Institute and Research Center by "NATIONAL ACCREDITATION BOARD FOR TESTING AND CALIBRATION OF LABORATORIES" (NABL).

To our patients, it shall assure technically valid result performed by a competent staff using technically valid procedures in an environment of effective quality management system as enunciated in practice standards ISO 15189 and NABL 112.

These results shall be acceptable globally in all countries where accreditation is carried out by International Laboratory Accreditation Cooperation (ILAC) & Asia Pacific Laboratory Accreditation Cooperation (APLAC).

The scope of accreditation encompasses all facets of laboratory practices comprising of Biochemistry, Hematology, Microbiology, Clinical Pathology and all important Histopathology and accompanying Immunohistochemistry.

While we rejoice at being able to provide quality laboratory services to our clients, we understand it is an onerous responsibility to maintain and improve the quality standards and shall continuously strive for same.

Posted at : Ashok Vihar Head Post Office, Delhi-110052  
Registered with Registrar of Newspaper Under No. 68797/98  
Postal Department Registration No. DL(N)06/004/2009-11  
Licensed to Post without prepayment under No. "U"(DN)-162/2009-11



To, \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

If undelivered please return to :

**RAJIV GANDHI CANCER INSTITUTE  
& RESEARCH CENTRE**

**Sector-V, Rohini, Delhi-110085**

Printed & Published by Mr. K. K. Mehta on behalf of Indraprastha Cancer Society & Research Centre and Printed at Raju Art Printers, 18-A, Old Gobind Pura Extn., Street No. 2, Parwana Road, Delhi-51, Tel.: 9871006333  
Published from RGCI&RC, Sector-V, Rohini, New Delhi-110085 • Editor: Dr. A. K. DEWAN