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C Reactive Protein (CRP) extended uses

The other day I was reviewing a case in a hospital.

WBC count was 9700 / c.mm Polymorphs were 90 % with shift to left and toxic granules (2 +)

It was a CRF case on dialysis.

I advised to get a serial CRP at least on three days. There was some hesitation, by technician, as the test costs and this was charity hospital and cost to patient is a factor. I advised second day to be free.

It was reported more than 200 mg / dl.

The charity trust hospital had Nyco card with reader. Nyco card are expensive

The patient turned serious was shifted to a corporate hospital

Comments cum lessons

- Clinicians often read report such as 9700 WBC and miss to read shift to left or toxic granules. Even if they have noticed they will add antibiotic or possibly change antibiotic combination.
- Pathologists are not technician, are part of health care system, and when **appropriate should give their inputs.** When I discuss this point with colleagues the general comment is the fear that the clinicians would not appreciate. I disagree. My experience is not bad. I cannot emphasis this point enough.
- There are many markers of inflammation. Strategically CRP is good and used as a diagnostic tool but use of CRP as follow up tool is very limited (we will see this a little later)
- Nycocard is semi quantitative per test is more expensive then fully automated turbidimetric / nephlometric methods. In addition turbidimetric methods are subject to quality control. It is a continuous need.
- Here Nycocard reading was reported as more than 200 mg / dl. Exact reading is essential for follow up. To achieve greater precision by serial dilution then it will be very expensive. Manual serial dilution has its own imprecision. In other words Nycocard, here, just confirmed presence of infection. (qualitative)

Why should we do accurate quantitative. This particular quantitative usage is hardly ever used by clinicians and laboratories. Daily monitoring by CRP should be a standard protocol in all critical care units.

CR protein has half life of 18 hrs. In presence of infection it will either double or with effective antibiotic it will decline and if does not rise or does not decline it could also mean that there is some patient immunity interplay.

Critical care unit routinely do variously cultures. The offending microbe (we might have another microbe isolated) may or may not grow and one has to wait for results of antibiogram. At best this will result in delay of 72=96 hr. Can we wait that long and evaluate condition of patient by clinical and other subjective and objective parameters? **Measuring serially CRP will additionally add objectivity**.

Measuring CRP has another advantage – it may give an early warning when it rises – say patient on ventilator or when patient is on various life support lines.

Finally, are charity and trust hospitals too much occupied with cost consciousness The relatives of this patient sensing seriousness did shift to another facility. They were prepared to spend.

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