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Molecular Diagnosis in Hepatitis C Virus Infection-Past, Present and the Future

By Dr Siamak Tonekaboni (PhD)

The diagnostic strategy of HCV infections is usually based on three essential principles: cost, convenience and the ability to link it to HCV treatment. Over the years many diagnostic tests have been employed but recently the molecular diagnostic techniques have become central to the management of patients with HCV and can be used for many different applications. e. g. screening, assessment of viral load, genotyping, resistance and treatment monitoring.

These new PCR based diagnostic tests all can have a positive impact on patient care as they deliver high sensitivity and specificity, allied to a fast turnaround time. In addition to these attributes, the latest technology is driving towards long term, temperature stable reagents, lower cost per test, higher throughput, smaller instruments with simple operation and faster time results.

With the fast pace of new technology and the plethora of systems that are coming to the market, selecting the most appropriate tool for the right clinical setting ,which helps clinicians save costs while providing effective management and care is a challenge.

Today there is a number of high throughput molecular systems from companies such as Roche, Abbott, Beckman Coulter and Hologic. However, recently a “new kid on the block” has appeared in the field of HCV -the Cepheid Gene Expert (GX) system. The GX system has many useful benefits such as: One minute hands-on time, Fast results (<105 minutes), broad dynamic range (10-10,000IU/mL), Quantitates HCV genotypes 1-6 and built-in controls for result integrity. In addition to this, the GX analyzer system is very scalable and flexible, suitable for all settings ranging from low volume, near patient testing such as GX OMNI through to high volume laboratory testing such as INFINITY platform.

The field of diagnostic in HCV is dynamic and as new tests and drugs come along there are still many open questions for future discussion. For example: (i) which is the most effective-quantitative or qualitative tests? (ii) With the new DAA drug availability, do we still need viral load testing and if so how often? (iii)Can we use qualitative tests during therapy and if so what should be the LOD (Limit of detection) and (iv) Can serologic tests (HCV Ag test) replace confirmation by molecular tests in HCV diagnosis?

<http://bbvreview.com/hepatitis-c/novel-tools-for-diagnosis-and-management-of-hcv>