

This strategy provided a diagnostic validity of 43%, which was higher in late-stage ovarian cancer (56% versus 35%), and a specificity of 100%.

**Conclusions.** Prospectively designed studies are required to assess the safety and effectiveness of the PapSEEK test in screening settings, as well as studies comparing the technology with conventional screening methods. No cost-effectiveness studies have been conducted for the PapSEEK test.

## PP152 Epigenetic In Vitro Diagnostic Test For Early Diagnosis In Lung Cancer: An Early Assessment

Ana Isabel Hijas-Gómez ([ahijas@outlook.es](mailto:ahijas@outlook.es)),  
Mar Polo-de-Santos, Setefilla Luengo-Matos  
and Luis Maria Sánchez-Gómez

**Introduction.** Lung cancer is a leading cause of morbidity and mortality, and early diagnosis is essential for patient survival. Epigenetics is an innovative discipline that provides biomarkers to aid in early diagnosis, patient risk classification, or outcome prediction. Each type of tumor may present specific patterns of gene methylation, the analysis of which may be useful as a diagnostic tool. The aim of this study was to conduct an early assessment of novel in vitro diagnostic (IVD) tests based on the identification of DNA hypermethylation epigenetic signatures developed for the early detection of lung cancer.

**Methods.** We identified this technology through the Early Awareness and Alert System “SINTESIS-new technologies” of the Agencia de Evaluación de Tecnologías Sanitarias - Instituto de Salud Carlos III. A literature search of PubMed, the Trip Medical Database, the International Clinical Trials Registry Platform, ClinicalTrials.gov, and the Cochrane Central Register of Controlled Trials was conducted. Studies published up to November 2019 were reviewed.

**Results.** Three tests were identified. Epi proLung® analyzes the hypermethylation status of SHOX2/PTGER4 genes in blood samples using polymerase chain reaction (PCR) and showed good discrimination capacity with respect to healthy controls (area under the curve [AUC]=0.91) and patients with non-malignant lung diseases (AUC=0.86). The Epi proLung BL Reflex Assay® for determining the hypermethylation state of the SHOX2 gene in bronchoalveolar lavage samples by PCR had modest sensitivity (69%, 95% confidence interval [CI]: 64–75) and high specificity (96%, 95% CI: 97–100). A test in development for determining the hypermethylation state of BCAT1/CDO1/TRIM58/ZNF177 genes in aspirated or bronchoalveolar lavage samples by pyrosequencing yielded a sensitivity of 85 percent and a specificity of 81 percent, with an AUC of 0.91 at the optimal cutoff point.

**Conclusions.** The evidence for the three tests showed promising results in terms of diagnostic validity. However, although personalized medicine is becoming increasingly widespread in the field of cancer diagnosis, more studies are needed to evaluate the

clinical utility of these diagnostic tests, either as a complementary or a screening test, and the economic impact of their use.

## PP162 Use Of The RenalGuard® System To Prevent Contrast-Induced Nephropathy

Perizat Bektassova, Valeriy Benberin, Andrey Avdeyev ([avdeyev.andrey@yahoo.com](mailto:avdeyev.andrey@yahoo.com)), Nasrulla Shanazarov, Ruslan Akhmedullin, Makhabbat Okesh, Tansholpan Aimanova and Gulzada Bariyeva

**Introduction.** Contrast-induced nephropathy (CIN) is a common cause of hospital-acquired acute kidney injury (AKI) following the administration of contrast media for coronary interventions or procedures such as diagnostic coronary angiography. The optimal way of preventing CIN remains uncertain. However, preliminary intravenous hydration, minimizing the volume of contrast media, and avoiding the use of nephrotoxic drugs are recommended in current management guidelines. The aim of this analysis was to compare the RenalGuard® system with standard care.

**Methods.** A comprehensive literature search was conducted in PubMed and Google Scholar to identify evidence on the clinical and economic effectiveness of forced diuresis with matched hydration using the RenalGuard system for preventing CIN. Multiple criteria decision analysis (MCDA) was used to assess the performance of the method in hospital settings, compared with alternative options.

**Results.** Several systematic reviews with meta-analyses demonstrated that forced diuresis with matched hydration using the RenalGuard system was associated with a significantly lower relative risk of CIN among high-risk patients with chronic kidney disease. However, the evidence supporting the advantage of the proposed method over current forced diuresis techniques with manual calculation of the volumes for matched hydration in the hospital setting was limited.

**Conclusions.** Although the effectiveness of the RenalGuard system has been demonstrated in meta-analyses, its clinical advantage over forced diuresis with manual hydration calculation is uncertain. It is also worth noting the lack of evidence to date on this technology, the fact that it is still at the research stage in some countries, and that it is not included in CIN management guidelines.

## PP165 Bridging The Gap Of Health Services During The COVID-19 Pandemic Through Telemedicine

Pedro Galvan ([ibiomedica@iics.una.py](mailto:ibiomedica@iics.una.py)), Ronald Rivas, Luciano Recalde, José Ortellado, Carlos Arbo, Juan Portillo, Juan Mazzoleni and Enrique Hilario

**Introduction.** Health care for patients with chronic pathologies was scarce and limited worldwide during the COVID-19

pandemic. The challenge for clinical and biomedical engineers is to develop a bridging system to maintain the basic health services for chronic pathologies. Populations living in low-income countries did not have access to basic health services during the pandemic and depended on the scarce resources of their emergency health system. There were also equity issues between urban and rural populations. In this context, telemedicine tools should be directed toward maintaining the basic health services for patients with chronic pathologies. This study evaluated the results of a telemedicine system in remote public hospitals in Paraguay to show how health care for patients with chronic pathologies has been maintained by providing access to tertiary level diagnostic services by specialists.

**Methods.** This descriptive study evaluated the results of using telemedicine between 2014 and 2020 for diagnosis in remote public hospitals to bridge the gap in providing basic health services for patients with chronic pathologies during the COVID-19 pandemic.

**Results.** A total of 620,289 telediagnoses were performed in 67 hospitals. The 399,806 electrocardiogram diagnoses performed in 61 hospitals were normal (62%) or showed unspecified arrhythmias (13%) and sinus bradycardia (10%). The 207,597 telotomography tests performed in 12 hospitals were performed on the head because of motorcycle accidents and cerebrovascular diseases (54%), on the chest (14%), and other anatomical regions. The 12,867 electroencephalograms performed in 19 hospitals were for the antecedents of seizure (54%), evolutionary controls (14%), and headache (12%). The 19 ultrasound studies corresponded to prenatal controls.

**Conclusions.** Although the telemedicine tool implemented in public health to bridge the gap in basic health services for patients with chronic pathologies during the COVID-19 pandemic offered better equity in the provision of services in remote locations, a widespread use assessment should be undertaken before this tool is adopted.

## PP167 Cost Effectiveness Of Universal Childhood Vaccination Against Hepatitis A

Cristina Valcarcel-Nazco ([cristina.valcarcelnazco@sescs.es](mailto:cristina.valcarcelnazco@sescs.es)), Carmen Guirado-Fuentes, Lidia García-Pérez, Renata Linertová, Javier Mar, Aurora Limia-Sánchez, Marta Soler-Soneira, Carmen Varela-Martínez and Pedro Serrano-Aguilar

**Introduction.** Hepatitis A (HA) is a liver disease with a low mortality rate, but it can cause debilitating symptoms and fulminant hepatitis in some cases. Its incidence is greater in geographical areas with poor sanitation and hygiene. Spain is considered a low-endemicity country, so universal childhood immunization against HA is currently not financed by the National Health System. The aim of this study was to synthesize the scientific evidence on the cost effectiveness of universal childhood vaccination against HA.

**Methods.** Full economic evaluations, published in the English or Spanish languages, were included if they reported outcome measures related to the prevention of HA, adverse effects,

or incremental cost-effectiveness ratios (ICERs). The Medline, Embase and Cochrane Library databases were searched for articles published from the beginning of the databases to April 2018.

**Results.** A total of 23 economic evaluations were included: one in a country of high endemicity, nine in countries of intermediate endemicity, and 13 in countries with low endemicity. Only one Spanish study, published in 1997, was found. Studies conducted in high- and intermediate- endemicity countries concluded that a universal childhood vaccination program against HA was a cost-effective option. However, in the case of countries with low endemicity the results were heterogeneous, although most agreed that a systematic vaccination strategy would not be a cost-effective option and that the adoption of such a strategy would not be justified given the limited benefits it would offer. The results of the economic evaluations depended on parameters such as the price and duration of the vaccine effect and the program coverage.

**Conclusions.** In countries with low endemicity the results were heterogeneous, although most studies concluded that the implementation of a universal vaccination strategy is not justified from the point of view of cost effectiveness.

## PP168 Quality-Of-Life Study For Caregivers Of People With Drug-Resistant Focal Onset Seizures

India Flint ([indiaflint@phmr.com](mailto:indiaflint@phmr.com)), Jasmina Medjedovic, Ewa Drogon O'Flaherty, Samuel James, Natasa Savic, Alexandra Soare and Louise Longworth

**Introduction.** The quality of life (QoL) of caregivers who look after individuals with drug-resistant focal-onset seizures (FOS) can be significantly affected by their caregiving responsibilities. This is widely recognized by various health technology assessment bodies, including the National Institute for Health and Care Excellence. The aim of this study was to assess the QoL and to generate health-related utility data for individuals caring for adults with drug-resistant FOS. This project will provide critical information on an often neglected and undervalued aspect of epilepsy.

**Methods.** An online survey including questions on sociodemographic characteristics, caregiver burden and productivity, the EQ-5D-5L, and the Care Related Quality of Life (CarerQoL-7D) was administered to caregivers of individuals with drug-resistant FOS in the United Kingdom.

**Results.** The analysis included 86 caregivers. The majority were men aged between 25 and 34 years whose caring responsibilities ranged from 25 to 34 hours per week. In the previous 28 days, most individuals they cared for experienced four FOS, with the longest seizure-free period ranging from 6 to 15 days. The patients had previously been prescribed at least four anti-seizure medications.

The caregivers' mean EQ-5D-5L score was 0.66 (range -0.19 to 1), whilst the mean CarerQoL-7D score was 71 (range 21 to 100). The most affected dimension of the EQ-5D-5L was self-care, while