(SD 8.2) at the beginning of treatment to 22.12 (SD 5.1) at the end of the study.

**Conclusions** Long-term monitoring (almost 6 months) of serum creatinine and urinary proteins is required, as in previous studies conducted, to evaluate the effectiveness of treatment.

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No conflict of interest.

## DGI-051 ORAL ANTINEOPLASTIC TREATMENT ADHERENCE

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**Background** The use of orally administered anticancer treatment has increased dramatically in the last few years. Patient non-adherence to oral antineoplastic treatment is a barrier to effective treatment.

**Purpose** To estimate adherence and to identify factors that can affect compliance with oral antineoplastic drugs in cancer patients.

**Materials and Methods** Adult oncology-haematology patients using oral antineoplastic treatments dispensed at the outpatients Hospital Pharmacy from July to September 2012 (three months) were included.

Data was collected to characterise the sociodemographic variables (gender, age), medical diagnosis and oral antineoplastic treatment.

Two questionnaires were used for data collection and filled in during pharmacist-patient interviews.

The Morisky and Green Test evaluates attitudes regarding treatment adherence.

The DUKE-UNC functional social support scale measures the perceived social support. A score ≥32 indicates normal support, and <32 low perceived social support.

The association between qualitative variables studied was evaluated with the chi-square test. Quantitative variables, shown as median and standard deviation, were compared with the student test. The $p < 0.05$ values were considered statistically significant.

**Results** 30 patients were included during the study period, 56.66% female. Median age: 65 years (range 24–78).

Antineoplastic oral drugs used: capecitabine (24 patients), imatinib (4), abiraterone and pazopanib (1 case each)

Type of cancer: colorectal (20 patients), chronic myeloid leukaemia (3), breast (2), gastric, GIST, vagina and thyroid (1 case each)

80% adherence was found using the Morisky and Green Test.

Three patients scored below 32 on the DUKE-UNC questionnaire.

Patients with positive values (non-adherence) for Morisky and Green test were statistically significantly associated with younger age ($p < 0.0366$) and low perceived social support (DUKE-UNC < 32) ($p < 0.003$)

**Conclusions** Non-adherence to antineoplastic treatment is 20% in our population. Factors related to poor compliance were younger age and DUKE-UNC score below 32.

No conflict of interest.

## DGI-052 OUTCOMES WITH THE USE OF NITROFURANTOIN IN RENAL IMPAIRMENT IN PRIMARY CARE – A PILOT STUDY

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**Background** Nitrofurantoin is probably the agent of choice for urinary tract infections (UTIs), but its use is limited by its lack of efficacy in impaired renal function.

**Purpose** The British National Formulary says to avoid in patients with renal impairment (estimated glomerular filtration rate [eGFR] <60 ml/min), but the Renal Drug Handbook recommends use if >20 ml/min. This pilot study was to look at which guidance provided the best outcome.

**Materials and Methods** Patients over 18 years from a single city centre medical practise were reviewed if they had received nitrofurantoin prescriptions and an eGFR had been recorded. Where there was low eGFR, a Cockcroft & Gault Creatinine Clearance (C&G-IBW-ClCr) based on the ideal body weight (IBW) was performed. Outcomes were reviewed. Success was assumed if there were no further antibiotics, no admission to hospital for a related episode or not recorded as still symptomatic on their medical records.

**Results** Of 164 patients, 37 were reviewed. Average age: 72 (range 21–100); median 80 years. Average eGFR/1.73 $m^2$ = 73.8 ml/min (range 33–130) and C&G-IBW-ClCr = 55 ml/min (24–127). Of 15 patients with C&G-IBW-ClCr >60 ml/min, none needed further antibiotics or were recorded as still symptomatic.

22 patients with C&G-IBW-ClCr <60 ml/min (average eGFR 61.7 ml/min and CrCl 38.7 ml/min), eighteen (81.8%) had further antibiotics or were recorded as still symptomatic. Only seven patients (31.8%) had an eGFR/1.73 $m^2$ <60 ml/min. Twelve had further antibiotics, 4 were still symptomatic, 1 went into hospital (unrelated) and 1 went back onto prophylactic antibiotics. No sample stated resistance but 6 samples stated sensitivity. The successfully treated patients had an eGFR of 75, 57, 55, & 53 ml/min /1.73 $m^2$ & a CrCl of 36, 39, 50 & 53 ml/min.

**Conclusions** Nitrofurantoin should not be recommended where renal function is impaired. This pilot study shows that eGFR is not a good indicator of renal function, and that CrCl should be used. Over 80% with a CrCl < 60 ml/min needed further treatment. This will progress to a larger study.

No conflict of interest.

## DGI-053 PHARMACOECONOMIC CONSIDERATIONS REGARDING THE TREATMENT OF CHRONIC HEPATITIS C WITH PROTEASE INHIBITORS

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**Background** The standard care for chronic hepatitis C is a double treatment that consists of associating ribavirin (RBV) and peginterferon (pegINF) α-2a/2b. New therapeutic agents telaprevir and

boceprevir have recently been approved in Europe in combination with pegINF and RBV for the treatment of patients with genotype 1 HCV who have not been treated previously or when standard treatment has failed. They are serine protease inhibitors and belong to a new class of drugs: direct acting antivirals (DDAs).

**Purpose** To evaluate the pharmacoeconomic aspects of triple therapy with RBV, pegIFN and telaprevir or boceprevir, as reported in the literature.

**Materials and Methods** Cut-off guidelines have been established to quantify the suitability of new treatments based on the cost of treatment per quality-adjusted life year (QALY). The impact of using the new drugs was assessed on a hypothetical group of 14,000 patients infected with HCV (genotype 1). Unfortunately the price of the new drugs has not yet been negotiated in Italy; this represents a limit on the evaluation. The results are expressed in terms of Incremental cost-effectiveness ratios (ICERs).

**Results** The cost was estimated at €31,000/patient, 236.5 M€ over a period of 30 years. The ICER calculated to 20 years was €29.485/QALY while at 30 years was €18.291/QALY. Investment in these new molecules is favourable from a time horizon of 20 years.

**Conclusions** Boceprevir and telaprevir with standard treatment are cost effective considering the lifetime incidence of liver complications, quality-adjusted life years and the incremental cost-effectiveness ratio. The cost effectiveness depends on the adherence to the treatment; it could be improved if the diagnostic and therapeutic pathways were optimised.

No conflict of interest.

## DGI-054 POST-PANDEMIC INFLUENZA A (H1N1) INFECTION IN CRITICALLY ILL PATIENTS PREVIOUSLY VACCINATED

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**Background** The A H1N1 2009 virus caused a worldwide pandemic during 2009. Vaccination of high-risk individuals was one of the recommendations of the World Health Organization before the post-pandemic period. Since this period, influenza activity has again associated with A H1N1 virus in Spain.

1059 cases of severe flu were hospitalised during the post-pandemic period in Spain and 41% of them were admitted to the ICU. The status of influenza vaccination was determined in 92% of the ICU patients.

**Purpose** To compare differential characteristics in morbidity, mortality and clinical manifestations of vaccinated patients who were admitted to Spanish ICUs during the flu season 2010–11 versus unvaccinated patients.

**Materials and Methods** Prospective, observational and multicentre study performed in 148 ICUs. Data were recorded in the GTEI/SEMICYUC registry. Adult patients with influenza A (H1N1) confirmed by rt-PCR were included in the analysis. Database records discriminated between having or not having been vaccinated.

**Results** 397 patients were admitted to Spanish ICUs during the post-pandemic period 2010/11 and supplied information about previous vaccination. A total of 22 (5.8%) patients had previously been vaccinated.

Vaccinated patients had a higher percentage of comorbidities compared to the other patients, (95.5% vs. 74.1%; p = 0.021). The mean number of comorbidities was also higher in vaccinated patients [1.91 (1.41) vs. 1.18 (0.99); p = 0.026].

Vaccinated patients showed higher rate of overall pneumonia but not bacterial coinfection. They received empiric antiviral treatment in a similar percentage and dosage, but they were treated for less time [6.9 (4.07) days vs. 8.99 (3.76) days; p = 0.003]. There was 2 days of delay in the initiation of empiric antiviral treatment in vaccinated patients (7.64 vs. 5.59 days), although it was not statistically significant. Data also showed that a greater percentage of vaccinated patients were treated with zanamivir compared to the rest of the group (22.7% vs. 5.3% p = 0.008). Vaccinated patients did not differ from the rest of the group in time from onset of symptoms, days to hospital admission or time until diagnosis.

**Conclusions** Clinical presentation, management and antiviral treatment was different in patients who had been previously vaccinated against influenza A (H1N1) virus.

No conflict of interest.

## DGI-055 PROTEASE INHIBITORS: NEW DRUGS FOR TREATMENT OF CHRONIC HEPATIS C

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**Background** The protease inhibitors boceprevir and telaprevir are indicated for treatment of chronic hepatitis C (CHC) genotype 1 in combination with peginterferon-alfa and ribavirin. These drugs increase efficacy and adverse effects.

**Purpose** To study the effectiveness and safety of boceprevir and telaprevir for treatment of CHC.

**Materials and Methods** Retrospective observational study including all patients who started treatment with telaprevir or boceprevir for treatment of CHC from January to September 2012.

Collected data: age, sex, type of patient (treatment-naive, recurrent or non-responder), liver fibrosis, HIV coinfection, viral loads at weeks 0, 4, 8, 12, 24 to evaluate efficacy and adverse effects and supportive treatment to evaluate safety.

**Results** We included 51 patients, 35 (70%) men and 15 (30%) women, with a mean age of 51 years. 5 patients were co-infected with HIV (off-label use).

Abstract DGI-055 Table 1 Baseline characteristics

| | Telaprevir | Boceprevir |
|---|---|---|
| **Patients** | 29 (58%) | 21 (42%) |
| **Type of patient** | | |
| treatment-naive | 5 (17.24%) | 4 (19.05%) |
| recurrent | 4 (13.79%) | 10 (47.62%) |
| non-responder | 20 (68.97%) | 7 (33.33%) |
| **Liver fibrosis** | | |
| 0–1 | 6 (20.69%) | 1 (4.76%) |
| 2 | 6 (20.69%) | 2 (9.52%) |
| 3–4 | 17 (58.62%) | 19 (90.48%) |

Abstract DGI-055 Table 2 Efficacy and safety

| | Telaprevir | Boceprevir |
|---|---|---|
| **Negative viral loads at week** | | |
| 4 | 15/23 (65.22%) | 7/15 (46.67%) |
| 8 | 18/21 (85.71%) | 8/14 (57.14%) |
| 12 | 19/19 (100%) | 4/5 (80.00%) |
| 24 | 8/8 (100%) | 1/1 (100%) |
| Anaemia | | |
| Reduced dose of ribavirin | 6 (20.69%) | 6 (28.57%) |
| Treatment with erythropoiesis-stimulating agent | 2 (6.90%) | 1 (4.76%) |
| Discontinued | 1 (3.45%) | 1 (4.76%) |
| Neutropenia | | |
| Reduction dose of peginterferon-alfa | 2 (6.90%) | 4 (19.05%) |
| Treatment with granulocyte colony-stimulating factor (G-CSF) | 1 (3.45%) | 4 (19.05%) |
| Rash | | |
| Discontinued | 1 (3.45%) | 0 (0%) |