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HCV treatment with new direct acting antivirals (DAAs): characteristics of patients failing new DAA combinations

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Background: With the recent development of new potent DAA combinations, sustained virological response (SVR) rates >90% are achievable for almost all HCV genotypes and stages of liver disease. In the case of treatment failure, the appearance of resistance mutations is likely. However, it is important to document the characteristics of patients in case of treatment failure with new DAA in order to know other possible causes that may trigger therapeutic failure.

Material/methods: We included all consecutive patients treated of HCV infection in our hospital (Complejo Hospitalario Navarra, Pamplona; Spain) and failing an all-oral DAA regimen started between October 2014 and October 2016 (some of them still ongoing). Treatment failure was classified as virological therapeutic failure (null-response, breakthrough or relapse) or non-virological therapeutic failure (adverse drug reaction, death and other causes non-related with treatment). The HCV-RNA detection was performed during treatment (4th week of treatment and end of treatment) and 12 weeks after completion of treatment and/or thereafter. Cobas® HCV (Roche Diagnostics, Mannheim, Germany (Roche®) was used to perform HCV-RNA detection and VERSANT® HCV Genotype 2.0 Assay (LiPA) (Siemens Healthcare Diagnostics, Tarrytown, NY, USA) to determine HCV genotype.

Results: Of 635 patients who initiated an oral DAA regimen, 23 patients (3,6%) failed therapy [14 virological therapeutic failure (2,2%) and 9 non-virological failure (1,4%)]. We observed 7 relapses, 4 null-response, 3 breakthrough, 6 stopped treatment (5 adverse drug reaction and 1 voluntary-stop) and 3 deaths. We could observed differences between global and DAA-failure populations. In general, ***Global-population*** characteristics: 69% male, 24,6% cirrhotic, 60% had a FibroScan ≥ F3, 19% HIV-HCV co-infection and 61,4% had received previous treatment; HCV genotype was 1a/1b/2/3/4/5 in 34,2%/33,5%/1,4%/19,4% and 0,2%. ***DAA failure-population***: 78,6% male, 14,3% cirrhotic, 57% with a FibroScan ≥F3, 14,3% HCV-HIV co-infection and 35,7% received previous treatment. HCV genotype distribution: 50% GT1a, 21,4% GT1b, 14,3% GT3 and 14,3% GT4. Regarding the overall population, male patients with failed treatment were 2,5%, HIV-HCV co-infection were 1,7%, 1,3% of cirrhotics and 4,4% of FibroScan ≥F3. HCV genotype of failed patients were the 3,2% of GT1a, 1,4% of GT1b, 1,6% GT3 and finally the 3% of GT4.

Conclusions: In this prospective real-life cohort, failure to an oral DAA regimen occurred in 3,6% of the patients and was mainly due to relapses or adverse drug reactions. According to genotype we observed that most cases of failed with DAA treatment corresponded to genotype 1a, 3,2%, followed by the genotype 4 with a 3% of failures.