

Similar SVR rates in IL28B CC, CT or TT prior relapser, partial - or null - responder patients treated with telaprevir/peginterferon/ribavirin: retrospective analysis of the REALIZE study

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Background: IL28B polymorphisms are linked to differences in SVR rates in HCV treatment-naïve patients treated with pegylated interferon (P) and ribavirin (R). REALIZE is a Phase 3 study that compared the efficacy, safety and tolerability of telaprevir (T), with or without a lead-in (LI), in combination with PR against PR alone in prior treatment-failure patients including relapsers, partial responders and null responders (NR). Both T12/PR48 arms were superior to control in all three patient categories. The relationship between IL28B genotype and SVR was investigated retrospectively. **Methods:** 527/662 (80%) patients enrolled in REALIZE consented to genetic testing. This represented 72%, 76% and 98% of the total relapsers, partial responders, and NR, respectively. Genotype rs12979860 was determined using a TaqMan allelic discrimination assay validated against Sanger sequencing on 50 independent samples. This was a retrospective study based on patients who consented to genetic testing prior to the discovery of IL28B, thus, sample size was not based on formal statistical considerations. **Results:** Overall, 94% were caucasian and 4% were black. Eighteen percent of patients were IL28B CC, 61% CT and 21% TT. By prior response category, the highest proportion of IL28B TT patients was among prior NR (28%), while the highest frequency of CC patients occurred among prior relapsers (27%). The observed IL28B genotype frequencies indicate that the population was not in Hardy-Weinberg equilibrium ($\chi^2 = 28$, $p < 0.0001$). IL28B genotypes were well balanced across all arms, with exception of a higher frequency of TTs in the placebo arm. Since no differences were observed between the two T arms, a pooled analysis is presented. In overall population, SVR in the T12/PR48 group was 79% for CC genotype, 60% for Ct and 61% for TT; in the Pbo/PR48 group frequencies were: CC 29%, CT 16% and TT 13%. Among prior relapsers, frequencies were: CC 88%, CT 86%, TT 85% for the T12/PR48 group and CC 33%, CT 20%, and TT 30% for the Pbo/PR48 group; partial responders SVR% for the T12/PR48 group was: CC 63%, CT 58%, and TT 71%; for the placebo group: CC 20%, CT 20% and TT 0%. In the prior null responders SVR on the T12/PR48 group was as follows: CC 0%, CT 29%, and TT 31%; in the placebo group was: CC 0%, CT 6% and TT 7%. **Conclusions:** Differences in SVR rates among IL28B CC, CT and CC patients were only evident when the three patient subpopulations were pooled; however, SVR among CT and TT patients were still high. In this retrospective analysis, IL28B genotype did not

contribute to outcome prediction in prior treatment-experienced patients treated with a telaprevir-based regimen, and thus may be of limited utility in this setting.

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REALIZE trial final results: telaprevir-based regimen for genotype 1 hepatitis C virus infection in patients with prior null response, partial response or relapse to peginterferon/ribavirin

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Background: The Phase 3 study REALIZE evaluated telaprevir (T) in combination with pegylated-IFN α -2a (P) and ribavirin (R) in well-characterized prior PR treatment-failure patients. **Methods:** REALIZE was a randomized, international, multicentre, double-blind, placebo-controlled trial to evaluate the efficacy, safety and tolerability of T (750 mg q8h) plus P (180 μ g/w) and R (1000- 1200 mg/d) compared with PR alone in G1 HCV-infected patients with prior PR treatment failure including non-responders (null- and partial-responders) and relapses. The treatment arms (randomized 2:2:1, stratified by viral load and type of prior response) were: 1) T/PR for 12 weeks, followed by PR for 36 weeks (T12/PR48); 2) PR for 4 weeks followed by T/PR for 12 weeks, then PR for 32 weeks (lead-in T12/PR48); 3) PR for 48 weeks (Pbo/PR48). The primary objective was to evaluate the superior efficacy of the T/PR arms for non-responders and relapses. Secondary objectives: evaluation of a lead-in and efficacy in prior null- and partial-responders separately. HCV RNA was quantified with the COBAS TaqMan[®] v2.0 assay (LLOQ = 25I U/mL). ESAs were not allowed for anemia management. **Results:** 662 treated. 70% of patients were male, 93% were caucasian, 26% had cirrhosis, and 89% had baseline HCV RNA \geq 800,000 IU/mL. The RVS was significantly higher in the two telaprevir groups than in the control group for patients who had a previous relapse (83% in the T12PR48 group, 88% in the lead-in T12PR48 group, and 24% in the control group) and for those who did not have a previous sustained response (41%, 41%, and 9%, respectively), including those who had a partial response (59%, 54%, and 15%, respectively) and those who had no response (29%, 33%, and 5%, respectively), or according to the stage of liver fibrosis or baseline viral load. The rate of RVS was also significantly higher for the pooled subgroup of patients who had either a relapse or a partial response in the telaprevir groups than in the control group (78% vs 21%). RVS were similar in the T12PR48 group and the lead-in T12PR48 for patients who had a relapse or no response or a partial response to previous therapy. Overall, the rates of RVS were 64% in the T12PR48 group, 66% in the lead-in T12PR48 group, and 17% in the control group. The differences in the rates of RVS were 47% between the

T12PR48 group and the control group, and 50% between lead-in T12PR48 group and the control group. **Conclusions:** T/PR demonstrated superior efficacy compared with PR in all prior treatment-failure populations studied including null- and partial-responders. A lead-in did not have a significant impact on SVR rates. The safety profile of T/PR in prior treatment-failure patients was consistent with that observed in treatment-naïve patients.

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Tratamento com interferon peguilado é superior a interferon genérico em infecção crônica pelos genótipos 2 ou 3 do vírus da hepatite C?

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Justificativa e Objetivos: De acordo com o protocolo brasileiro de tratamento das hepatites virais, pacientes com infecção pelo genótipo 1 do vírus da hepatite C (VHC) devem ser tratados com interferon peguilado α 2a ou 2b e ribavirina (RBV) e pacientes com infecção pelos genótipos 2 ou 3 com interferon α convencional genérico e RBV. Dados da literatura demonstram que pacientes com infecção pelo genótipo 1 apresentam taxas de resposta virológica sustentada (RVS) superiores quando tratados com interferon peguilado α 2a ou 2b e RBV em comparação com interferon α 2a ou 2b e RBV. Pacientes com infecção pelos genótipos 2 ou 3 apresentam taxas de RVS semelhantes quando tratados com interferon peguilado α 2a ou 2b e RBV ou interferon α 2a ou 2b e RBV. O objetivo deste estudo é avaliar se pacientes com infecção pelos genótipos 2 ou 3 apresentam taxas de RVS semelhantes quando tratados com interferon peguilado α 2a ou 2b e RBV ou interferon α convencional genérico, utilizado no Brasil, e RBV. **Métodos:** Incluídos pacientes com infecção crônica pelo genótipos 2 ou 3 do VHC e tratados com interferon peguilado α 2a (180 μ g/semana) ou 2b (1,5 μ g/kg/semana) e RBV ou interferon α convencional genérico (3 milhões UI, três vezes/semana) e RBV, no período de 2005 a 2010 no ambulatório de Moléstias Infecciosas – Hepatites Virais do Hospital de Clínicas da UNICAMP. Através da revisão dos prontuários médicos foram obtidas informações demográficas, laboratoriais e taxa de RVS. **Resultados:** Foram incluídos 171 pacientes. Cinquenta e oito (33,9%) pacientes foram tratados com interferon peguilado α 2a ou 2b e RBV e 113 (66,1%) receberam tratamento com interferon α convencional genérico e RBV. As taxas de RVS foram, respectivamente, 79,3 % e 48,7 %, $p = 0,0001$. Não foram observadas diferenças significativas relativas a dados demográficos, laboratoriais e histológicos entre as duas populações. As taxas de RVS em pacientes tratados com interferon peguilado e RBV foram superiores àquelas entre pacientes tratados com interferon α convencional genérico e RBV tanto em populações com fibrose hepática leve ou moderada, taxa de RVS respectivamente de 81,8% versus 56,6%, $p = 0,01$, como entre aqueles com fibrose avançada, taxa de RVS respectivamente de 76% versus 39,2%, $p = 0,002$. **Conclusões:** Tratamento com interferon peguilado e RBV é significativamente superior ao tratamento com interferon genérico e RBV entre pacientes com infecção pelos genótipos 2 e 3 do VHC.