SAT-043

The effect of re-exposure to somatostatin analogues in patients with polycystic liver disease

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Background and Aims: Symptomatic patients with hepatomegaly resulting from polycystic liver disease (PLD) are eligible for treatment with somatostatin analogues (SA). SA decrease liver volume and its effect is mainly achieved in the first 3–6 months of treatment while prolonged administration maintains the achieved effect and prevents further growth. In view of the apparent tolerance and extensive costs, we sought to explore alternative administration schemes. It is unknown whether re-exposure of SA results in a similar effect on liver volume. In this study we aimed to determine and compare the treatment effect of SA during two separate treatment periods separated by a drug holiday.

Method: Patients who were treated with somatostatin analogues (lanreotide or octreotide) for at least 3 months for two separate periods (On-I & On-II), spaced by a period without treatment (Off-I) for at least 3 months, were selected from our international PLD registry. Data was retrospectively retrieved from the medical chart in two tertiary centers. Effectiveness of both On-treatment periods was expressed as percentage change in height adjusted liver volume (hTLV), which was compared between the 2 periods using generalized linear mixed models with adjustment for liver volume at start of each treatment.

Results: Out of a total 741 patients, 35 patients were selected. Total length of the observation period was 44.0 months (IQR 10.0) and baseline height adjusted liver volume was 3198 ml/m (IQR 2152). Duration of On-I, Off-I and On-II were respectively 11.0 months (IQR 0), 20 months (IQR 14.0) and 11.0 months (IQR 9.0). There was no significant difference between the effect in On-I (−2.7% per 6 months) and On-II (−1.5% per 6 months) after correction for baseline hTLV, $p = 0.176$. 69% of patients ($n = 24$) had a decrease in liver volume during On-I. Out of these 24 patients, re-exposure to SA again led to a decrease in 83% ($n = 20$) after a period without treatment. Of all non-responders after On-I, 36% ($n = 4$) did show a decrease in hTLV after On-II.

Figure 1: Percentage change in hTLV per 6 months in the first and second treatment period.

Conclusion: This study suggests that patients who have an initial response on SA are likely to show a similar response during subsequent treatment periods. Future studies should explore the effect of intermittent exposure to SA on hTLV, symptoms and quality of life and compare this with continuous therapy.

SAT-044

The PR interval in the fetal electrocardiogram is significantly prolonged in severe intrahepatic cholestasis of pregnancy and potentially normalised by UDCA therapy

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Background and Aims: Intrahepatic Cholestasis of Pregnancy (ICP) is typically described as mild or severe based on total serum bile acid (TSBA) concentrations; severe ICP is diagnosed when TSBA concentrations are $\geq 40 \mu\text{mol/L}$ and is associated with an increased risk of adverse pregnancy outcomes, including intrauterine death (IUD). ICP is often treated with ursodeoxycholic acid (UDCA). There are case reports of abnormal cardiac rhythm, e.g. supraventricular tachycardia, bradycardia and prolongation of PR intervals in ICP fetuses. Bile acids are arrhythmogenic in *in vitro* cardiomyocyte models of the fetal heart, and arrhythmia is prevented by co-administration of UDCA. We hypothesise that severe ICP causes detrimental changes in the fetal electrocardiogram (fECG) and that UDCA can protect against these changes.

Method: We used the Monica AN24, a non-invasive transabdominal ECG device, to record overnight fECGs in women who were ≥ 20 weeks in gestation. Controls, defined as women with uncomplicated pregnancies, were recruited in addition to patients who had been diagnosed with severe or mild ICP who were either untreated or undergoing UDCA treatment. fECG files were downloaded and analysed using Monica DK software. A 2-hour period with minimal fetal heart rate dropout and no maternal movement was identified and the PR interval was marked on an averaged fECG waveform of up to 1000 complexes in 5-minute epochs over this period.

Results: We found that the electrocardiographic fetal PR interval was significantly prolonged in patients with untreated severe ICP ($118.2 \pm 8.5 \text{ ms}$, $n = 5$) in comparison to controls ($101.3 \pm 8.4 \text{ ms}$, $n = 17$, $p = 0.02$). This prolongation was not seen in patients with severe ICP who had been treated with UDCA. Patients with untreated mild ICP had a non-significant prolongation of PR interval ($108.1 \pm 12.8 \text{ ms}$, $n = 10$, $p = 0.11$). Statistical analysis was performed via a one-way ANOVA with post-hoc Bonferroni's test, results are presented $\pm$ standard deviation values.