Results. Between 2007–2012, 252 alcohol-exposed and 274 unexposed women were enrolled. After adjustment for covariates, alcohol dose was associated with significantly lower concentrations of Cu, folate and vitamin D; alcohol dose was associated with significantly higher levels of homocysteine ($p < 0.05$). Among 298 children who completed the Bayley, those in the alcohol-exposed group scored ~10 points lower on the Mental (MDI) and ~6 points higher on the PDI ($p < 0.001$). There was a significant interaction between alcohol group and the vitamin intervention; those in the alcohol exposed/intervention group scored approximately 11 points higher on the MDI ($p < 0.001$) and 6 points higher on the PDI ($p < 0.04$) than those assigned to standard of care.

Conclusion. These data suggest that maternal nutritional status is associated with alcohol dose in pregnancy and that a vitamin supplement intervention in pregnancy may have a beneficial effect.

S21.3
MICRONUTRIENT SUPPLEMENTS CAN MITIGATE THE TERATOGENIC EFFECTS OF PRENATAL ALCOHOL EXPOSURE ON UKRAINIAN INFANTS AT 6 MONTHS
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Background. Suboptimal nutrition may explain the higher incidence of Fetal Alcohol Spectrum Disorders (FASD) and Fetal Alcohol Syndrome (FAS) in disadvantaged populations. A clinical trial evaluated potential benefits of micronutrient supplementation, including choline, in an at risk population in Khmelnytsky and Rivne, Omni-Net sites in Western Ukraine.

Methods. Alcohol-using and nondrinking women recruited mid-pregnancy were randomized to: 1) multivitamin/multimineral supplement (MVM); 2) MVM + choline; 2) non-supplements. At 6-Months, children (N= 192) were assessed with the Bayley Scales of Infant Development (2nd ED) yielding standard scores for Mental Development Index (MDI), Psychomotor Development Index (PDI), orientation, emotional reactivity, and motor performance.

Results. Generalized Linear Modeling evaluated the impact of amount of alcohol used preconceptionally and within pregnancy. We collapsed the two supplement groups (Suppl group) and controlled social class (SES), smoking, gender, vitamin and folic acid use prior to recruitment. MDI was significantly impacted by alcohol dose during pregnancy ($\beta = -14.66, X^2(1) = 9.3, p < .002$) with those exposed to more alcohol having lower cognitive scores. Those who received supplements performed better ($\beta = -3.69, X^2(1) = 8.03, p < .005$). PDI scores did not differ by nutrition but showed a significant effect of alcohol dose during pregnancy ($\beta = -3.69, X^2(1) = 8.28, p < .004$). Orientation behavior also differed as a function of Suppl Group ($\beta = -5.45, X^2(1) = 4.51, p < .03$) and as a result of alcohol dose at conception ($\beta = -5.45, X^2(1) = 5.75, p < .02$); Motor Optimality was affected by alcohol dose at conception and during pregnancy.

Conclusion. Results suggest that micronutrient supplementation reduces negative impact of alcohol use during pregnancy on specific outcomes.

S21.4
THE IMPACT OF MICRONUTRIENT SUPPLEMENTATION IN ALCOHOL-EXPOSED PREGNANCIES ON INFORMATION PROCESSING SKILLS IN UKRAINIAN INFANTS
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Background. The role that micronutrients play in ameliorating the negative impact of prenatal alcohol exposure (PAE) was explored in a randomized clinical trial conducted in Rivne, Ukraine. To assess neurodevelopmental outcome, cardiac orienting responses (ORs) during an information processing paradigm were obtained from infants between 6-12 months.

Methods. Women who differed in prenatal alcohol use were recruited during pregnancy and randomized to group: None, Multivitamin/Minerals (M/M), and Multivitamin/Minerals plus Choline (M/M+ Choline). The habituation stimuli were presented for 10 trials and the dishabituation stimuli were presented for 5 trials. Baseline HR was collected for 30 sec prior to stimulus onset and then 9 sec post-stimulus onset from which difference values were computed for analysis of the first 3 trials of each condition.

Results. A repeated measures analysis of covariance was used for each of the two time periods. On the auditory dishabituation trials, a trial by vitamin group effect was found ($F (4, 172) = 2.428$, $p < .050$, eta-squared = .053) with those in the choline + MVM group having more HR deceleration on trial 3. On the visual dishabituation trials, a significant trial by prenatal alcohol exposure history was found ($F (2,180) = 3.281$, $p < .040$, partial eta-squared = .035). Infants with a history of PAE had higher HR on trials 2 and 3 than did those without PAE.

Conclusion. Prenatal alcohol negatively impacts the speed of encoding and memory of environmental events but choline supplementation during pregnancy may provide some beneficial impact to these skills.

S22
LIVER TRANSPLANTATION: A EUROPEAN PERSPECTIVE
SYMPOSIUM OF THE EUROPEAN FEDERATION OF ADDICTION SOCIETIES (EUFAS) II

S22.1
ASSESSING DRINKING STATUS IN LIVER TRANSPLANT PATIENTS WITH ALCOHOLIC LIVER DISEASE
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Accurate assessment of drinking by patients with alcoholic liver disease is important both before and after liver transplantation. Unfortunately, self-reports by these individuals often underestimate their actual alcohol consumption. Several recently developed biochemical measures can provide additional information on the patient’s use of alcohol. This paper describes ethyl glucuronide, ethyl sulfate, phosphatidyl ethanol and carbohydrate deficient transferrin as biomarkers of drinking and summarizes research dealing with their application with alcohol use disorder patients that are candidates for or recipients of liver transplant. The paper also offers suggestions for enhancing the reliability of self-report measures of drinking status.

S22.2
RISK FOR RELAPSE OF ALCOHOL USE AFTER LIVER TRANSPLANTATION FOR ALCOHOLIC LIVER DISEASE: A REVIEW AND PROPOSAL OF A SET OF RISK ASSESSMENT CRITERIA
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Liver transplantation for alcoholic liver disease is becoming a frequent procedure. Assessing the risk on relapse in alcohol use is a major issue. However, up to now, there is a lack in validated criteria that can be used to assess the risk on future relapse.

We identified all studies that have been published after the latest meta-analysis on this subject (2007–2012). Findings provide new evidence for the prospective validity of different clinical criteria; pre-transplant abstinence duration, diagnosis of alcohol dependence, social support, psychiatric comorbidity. These criteria seem promising as to the prediction of relapse in alcohol after liver transplantation.

S22.3
LIVER TRANSPLANTATION FOR ALCOHOLIC LIVER DISEASE: DO WE NEED NEW RULES?
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In 2011, 1,199 liver transplantations have been performed in Germany. The most frequent indication was alcoholic cirrhosis with 28 %. Mortality of alcoholic cirrhosis is high and when patients develop ascites and hepatic encephalopathy they have a 90 day mortality of 78 %. Thus, liver transplantation is at that stage the treatment of choice. The results of liver transplantation for alcoholic liver cirrhosis are excellent with one-year-survival of approximately 82 %. The relapse into alcoholism is between 15 and 20 % depending on definition. The prerequisite for this excellent success is among others alcohol
abstinence before transplantation. Liver transplantation for acute alcoholic steatohepatitis (ASH) has not been accepted in Germany, since 6 months of abstinence are required. Although an abstinence of six months before transplantation is a good inclusion criterion with 88 % abstinence after transplantation it is a poor exclusion criterion since only 41 % relapse when they have less than 6-months-abstinence before transplantation. Thus, the six-months-rule is questionable. A French/Belgium cooperative study has transplanted 26 patients with ASH without any abstinence before transplantation since they did not respond on steroid therapies. The conclusion of this study was that alcoholics can be transplanted without abstinence since neither the post operative mortality nor relapse into alcoholism was higher as compared to patients with 6 months abstinence before transplantation. This study created an ongoing discussion since in many countries organ availability is limited and the public has enormous questionings with respect to liver transplantation in the alcoholic.

Discussion. The review of liver transplantation in Germany parallel findings the prognosis and outcome.

Results. Clinical studies provide evidence that approximately one third of the diagnoses. In addition, procedures of assessment and factors of prognosis are contraindications.

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