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ORAL PRESENTATIONS
PLENARY LECTURES
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PL.1.1

EPIGENETICS IN ALCOHOL ADDICTION: NEW MECHANISMS FOR NEW TREATMENTS?
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For several decades, enormous progress has been made in terms of understanding the neurobiological mechanisms underlying alcohol addiction. This psychiatric disease has a complex aetiology involving the interaction of inherited pre-dispositions and environmental factors. With the new field of epigenetics, there is now the opportunity to integrate the role of the epigenome not only in the short-term effects of alcohol but also in the enduring neuro-adaptations caused by chronic use of alcohol. Emerging evidence suggests that epigenetic alterations to the genome, including DNA methylation and histone modifications, are important mechanisms underlying addiction. The epigenetic modifications may be part of the neuro-adaptations occurring during the transition from the controlled intake to the loss of control and may explain how alcohol can have such a persistent effect on brain gene expression and functioning. Epigenetic alterations may also be important factors in modulating genetic predisposition, response to treatment and the potential effect of environmental intervention to cure or prevent alcohol addiction. These epigenetic modifications have been studied in animal models and also in alcohol-dependent patients. Interestingly, from clinical studies, some data suggest that epigenetic modifications, possibly due to alcohol consumption, may contribute to alcohol craving. There are now accumulating data showing that pharmacological tools targeting enzymes involved in epigenetic modifications may be useful in reducing or preventing some behavioural responses to alcohol. The advances in the field of epigenetics towards elucidation of the mechanisms underlying alcohol addiction and in terms of therapeutic perspectives will be discussed.

PL.3.1

MEDICAL TREATMENT
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In the last decade, there has been an explosion of interest in finding efficacious medicines to treat alcoholism predicated on concomitant major advances in the neurosciences. Even though pharmacological targets that act at single neurotransmitters have been identified in several neuronal systems, the effect size of the active treatment compared with placebo is typically small. Hence, to increase the efficacy of medicines, attention has focused towards either administering medicines that act at multiple neuronal targets (i.e. a poly-system approach) or identifying agents that act at single neurotransmitters and produce medium-to-high effect sizes among individuals in genetic subgroups (i.e. personalized medicine). This plenary session will compare and contrast the merits and disadvantages of both approaches—using the results of studies that have tested medications that act at serotonergic, glutaminergic, GABAergic and opioid systems as examples—and propose a path towards future medications development for alcoholism. B.A. Johnson has served as a consultant to Johnson & Johnson (Ortho-McNeil Janssen Scientific Affairs, LLC), Transcept Pharmaceuticals, Inc., D&I Pharma, Organon, ADial Pharmaceuticals LLC, Psychological Education Publishing Company (PEPCo LLC), and Eli Lilly and Company.

PL.4.1

DOES ADDICTION RESEARCH NEED A PARADIGM SHIFT?
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In the last century, a plenitude of addiction research data have been published. Nevertheless, the definition of the disease is still discussed, and new classifications will be presented soon (ICD 11, DSM V). Epidemiology and national care systems are generally reluctant to changes. They support a 'substance causing dependence' approach and focus on intake patterns. Basic research, long-term course investigations and treatment trials show the heterogeneity of these patients and also the heterogeneity of different cravings (craving caused by withdrawal syndromes, by anxiety states, by mood disorders, or by compulsion). Onset of addiction, family burden of addiction and different typologies influence the course and treatment results. In brain research, we learned many new interactions of different levels of brain functions. A four-level model will be presented and the results of epidemiological studies, basic research up to treatment will show different possibilities how to influence these four different levels. I believe that we need a change from the focus on substance, e.g. alcohol, related psychological and biological disturbances to an individual-oriented approach. We have to look much more to the heterogeneity of brain functions and especially if we like to translate the results of animal trials we need definitions of subgroups of addiction reflecting the animal model. I hope that the new classification systems give possibilities to define these subgroups. We use the LAT-system (www.LAT-online.at) defining the most important items of these heterogeneities and available in many languages.

REFERENCE

SYMPOSIA

S01

ALCOHOL USE DISORDER DSM V DRAFT CRITERIA: DEVELOPMENT AND APPLICABILITY IN ADOLESCENT AND ADULT SAMPLES
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S01.1

DSM V DEVELOPMENT AND APPLICABILITY TO ADOLESCENT/YOUNG ADULT POPULATIONS
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Background. Revision of the DSM diagnostic criteria is underway; proposed changes have been posted for review. Data from clinical, general population, family and twin samples from the USA and across the world have been analyzed by the substance-related workgroup to inform the proposed revisions to criteria for substance use disorders. Data from both adults and adolescents have been studied. In this presentation, we will examine the proposed criteria for alcohol use disorder (AUD) in a young sample from the Collaborative Study on the Genetics of Alcoholism (COGA), a high-risk

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