

Olanzapine and Sertindole were investigated very carefully under this aspect. For these compounds a better efficacy on negative symptoms compared to placebo and to Haloperidole could be demonstrated. In addition it was shown, that most parts of the better effect was a dual-effect on the negative symptoms, not explainable via the effect on positive symptoms, better extrapyramidal tolerability or depressive symptoms.

### S12-5

#### ARE SPECIFIC STUDIES NEEDED FOR NEGATIVE SYMPTOMS IN SCHIZOPHRENIA?

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Negative symptoms have been recognized as a part of schizophrenia ever since the illness has been described. Much of the recent research has focused on negative symptoms in the context of acutely ill psychotic schizophrenic patients, who took part in drug trials that were mainly designed to evaluate the effects of antipsychotics against positive symptoms. The effects of these drugs on negative symptoms were often evaluated by including negative symptom scores of various rating scales as a secondary outcome variable in these studies. Post hoc evaluations of negative symptom scores were also common practice. Primary negative, or deficit symptoms, as they have also been called, received much less attention. This can also be attributed to the fact, that this group of patients is much more difficult to find and enter into a drug trial than patients who have to be hospitalized following an acute schizophrenic episode. Nevertheless, there is a need to study patients with primary negative symptoms since the results from the trials with acutely ill patients cannot be extrapolated to this group.

Next to research questions and aspects of patient management, regulatory issues also come into play. A "Note for Guidance on the Clinical Investigation of Medicinal Products in the Treatment of Schizophrenia" produced by the CPMP Efficacy Working Party of the European Agency for the Evaluation of Medicinal Products (EMA) makes it very clear that "claims concerning negative symptoms can only be made when negative symptoms are clearly defined and when it is shown that the effect is a direct effect on negative symptoms and not secondary to other causes".

## S13. Computers in patient management and quality control

*Chairs: I Modai (IL), C Pull (LUX)*

### S13-1

#### APPLICATION OF 3D VIRTUAL REALITY (VR) — SYSTEMS IN PSYCHIATRY

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Computer-mediated psychotherapy, particularly cognitive-behavioral therapy, is regarded as the most suitable field for the application of VR-Systems within the psychiatric field. As an example of these approaches we will present the data derived from a study using VR as a tool within the therapy of claustrophobic patients suffering from fear of heights and fear of flying.

Regarding that the main advantages of using VR-Systems are their enormous flexibility, going along with a maximum of consistency of the used paradigms, there are lying further applications of the technology clearly at hand. A first approach to using VR-Systems for enhancing cognitive patterns will be presented by Prof. Mueller-Spahn separately. In addition to that we would like to present another short outlook concerning the application of VR-Systems in the psychopharmaceutical research.

What one often tends to forget by using VR-Systems with patients is the simple question, whether the technology in itself is applicable to patients at all. Therefore we will also present our data derived from a study aimed at ergonomics and tolerance of VR-Systems.

### S13-2

#### THE PROJECT OF A NATIONAL DATA BANK FOR THE PSYCHIATRIC CARE IN ITALY

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The "Comitato per l'Informatica in Psichiatria (CIP) was established in 1995 by four Italian University centers and since then, more than one hundred Psychiatric Services all over the country have become members of this association.

The first step made by the CIP was the definition of a Minimum Basic Data Set (MBDS), that is the definition of a minimal shared pool of information to be collected in each member's own operative context. The definition of a MBDS should represent the first approach both to a future common lexicon in the psychiatric field and to the creation of a national psychiatric data-bank. For this purpose the CIP has adopted the SIDAP (Sistema Informativo per la Documentazione dell'Assistenza Psichiatrica) by Conti et al. as the official CIP software. This software allows the user both to define his own data retrieval model and to be perfectly coherent with the CIP MBDS standards.

At present the central data-bank collects every six months the MBDS from every member of the association with the use of magnetical supports or modern file transfer. In the near future a JAVA interface will be set up, in order to allow the users a direct on-line data input, storage and retrieval.

A database of this kind will contain a progressively increasing number of variables and within it, deeper comparisons and checks could be carried out. In this way the fields of the treatment monitoring, and outcome measuring, of psychopathological evaluation and of information exchange for treatment continuity could rapidly grow. Moreover the clinicians could combine single patient's data in order to verify on large samples the coherence between symptomatology and diagnoses, the different answers to different treatment strategies, the possible correlation between syndromic subtypes, treatments and outcomes and so on.

The authors describe in detail the results of their work, focused on achieving more detailed and richer knowledge of psychiatric pathology and its treatment.

### S13-3

#### COMPUTERS AND STRUCTURED DIAGNOSTIC INTERVIEWS IN PSYCHIATRY

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The Tenth Edition of the International Classification of Diseases and Related Health Problems or ICD-10, and the Fourth Revision of the Diagnostic and Statistical Manual or DSM-IV propose

explicit diagnostic criteria and algorithms for making a diagnosis. Structured or semi-structured diagnostic interviews attempt to operationalize the assessment process in that they propose questions for eliciting the individual signs and symptoms that enter into the definition of each criterion. Diagnoses are derived using computer programs that build upon algorithms as defined in the diagnostic systems. The current use of computers in this field as well as the potential for further developments will be illustrated, using examples from three WHO structured diagnostic interviews: the Composite International Diagnostic Interview or CIDI, the Schedules for Clinical Assessment in Psychiatry or SCAN and the International Personality Disorder Examination or IPDE.

### S13-4

#### 3D VIRTUAL REALITY (VR) SYSTEMS, COGNITION AND CREATIVITY

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We will present our present approaches for enhancing cognitive processes as well as creative thinking by using a 3D VR-System.

The first study was designed in order to investigate the effect of VR-Systems within cognitive research. Therefore we formed two investigation groups: The VR group performed various standardized cognitive tests using a 3D VR-Simulation as testing environment, while the control group performed the tests in the "usual" way.

In another study the effect of changes in textures, colors, in- & output devices and the effect of unexpected irrational changes of the applied 3D VR-Simulation on cognitive patterns and creative thinking were investigated.

In both studies special attention was given to the participants tolerance of the immersion in the virtual worlds.

### S13-5

#### ITALIAN PSYCHIATRY AND COMPUTER AIDED INTEGRATION BETWEEN AGENCIES AND DEPARTMENT FACILITIES FOR IMPROVEMENT OF PATIENT MANAGEMENT AND QUALITY CONTROL

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The focus of Italian psychiatry is community care, which is based on Mental Health Departments.

The services which belong directly to the Department are emergency room, emergency ward, community services, half way houses and community rehabilitation centers.

For any single therapeutic project the Department activity can be integrated with other independent agencies, such as social services, non profit associations, local administrations, courts, drug addiction services and child psychiatry services.

The integration of activities among several agencies requires an efficient methodology of data recording which can allow easy and reliable data transmission. The standardization of the this process has constantly brought up problems, both technical and ethical (e.g. the question of privacy). From a technical point of view the organization of these interactions has been developed together with the development of informatics.

Problems faced in a complex way in the past, have been simplified in the last few years with technical solutions. Such as the development of WEB platform (such as the Internet).

This paper describes the historical development of the Department of Informative Systems, with a specific consideration of the most recent models based on common software which allow the local flexibility required in a departmental organization.

These models of informative systems can also offer excellent opportunities to do research about psychiatric care effectiveness, because they allow monitoring of therapeutic course within the specific social and health care context.

### S13-6

#### PREDICTION OF SUICIDE IN PSYCHIATRIC PATIENTS BY NEURAL NETWORKS

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**Background:** Convergence of neural networks in psychiatric parameters has been proven. The significant parameters in the detection of response to treatment have been identified by neural networks. The system proved to be as efficient as expert physicians in suggesting treatment plans for schizophrenic and depressive patients. We tested neural networks and their ability to predict suicide in psychiatric patients.

**Methods:** Our multicenter investigation included four psychiatric hospitals in four different demographic regions in Israel, in 2 stages. During the first stage, a total of 161 patient's records were fed into the Neural Network Backpropagation system in order to teach the system. Of those files, 77 belonged to patients with no previous suicide ideation or attempt, and 84 belonged to patients with Medically Serious Suicide Attempts (MSSA). The intelligent Neural Network Backpropagation system was tested on 150 patient records belonging to patients with no previous suicide ideation or attempt and 54 records of patients with MSSA.

**Results:** Sensitivity was 65%, and specificity was 72%. Positive predictive value was 53.5% and negative predictive value was 91%. As expected, the system was more accurate in the hospital whose data was used to train the computers. In the first stage of the study, backpropagation was more accurate for predicting no risk than for predicting risk of suicide. The results at this point were disappointing. During stage two we trained the system with 100 new files; (50 MSSA and 50 with no previous suicide ideation or attempt), and entered additional psychiatric parameters. The system was tested on 100 patient files; 50 MSSA and 50 with no previous suicide ideation or attempt. Detection of MSSA was 94% and detection of no risk was 90%, for a total of 92% accuracy, which is most promising. We now plan to test the predictive value of the system in our emergency ward.