

on our team were treated with less polypharmacy, more second-generation generation drugs and increased use of long-acting injectable antipsychotics.

Conclusion: Patients followed in the early psychosis unit had higher rates of treatment adherence and lower relapse rates. The results might be related with the specific ingredients of a specialized team, with more regular follow-up, use of fewer drugs simultaneously and newer drugs with better tolerability profiles, associated with psychosocial interventions addressing the patient and its family, as well as greater service accessibility and patient empowerment. These results underline the advantages of FEP specialized units when compared with usual care, that were observed in Portugal as reported in many other countries and clinical contexts [4].

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P.630 Neurocognition for the classification of first episode schizophrenia, unaffected family members and healthy controls: A machine learning study

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Backgrounds: Neurocognitive deficits are core features of schizophrenia. They are evident as early as in the first-episode and span several domains including attention, memory, psychomotor speed, and executive functions [1]. However, cognitive deficits are not limited to schizophrenia patients, but they can be also present in individuals who are at high clinical and/or familial risk for psychosis [2]. Machine learning is a promising computational method which aids clinical decision making by making individual level diagnostic and prognostic inferences from multidimensional data rather than describing statistical group differences [3]. The aim of this study is to build a machine learning (ML) algorithm to correctly classify individuals into their

respective categories (i.e., first episode schizophrenia, familial risk for psychosis and healthy controls) by their neurocognitive profile.

Methods: This study was conducted as part of an ongoing first episode schizophrenia research in Istanbul Faculty of Medicine Psychotic Disorders Research Program, in collaboration with the University of Alberta. Overall, 48 patients with first episode schizophrenia (FES), 30 unaffected siblings and 35 age, education and gender matched healthy controls involved in the study. The definition of FES was previously described in detail [4]. Clinical scales and neurocognitive tests were applied to FES subjects during clinical stability periods after the first psychotic episode. Seven patients did not have siblings, 6 patients' siblings were living in another city and 3 patients' siblings refused to participate into study. All siblings and healthy controls were assessed with SCID-I and have not received any psychiatric diagnoses. Neurocognitive tasks involved The Rey Auditory Verbal Learning Test, Stroop Test, Wisconsin Card Sorting Test, The Digit Span Test and Trail Making Test A/B. Twenty-two different variables derived from neurocognitive tasks were used by ML algorithm in order to predict the classes which individuals belong. Support Vector Machine is a multivariate classification algorithm which has been extensively studied in biomedical research as diagnostic and prognostic tools. The classification was performed after selecting the most discriminant features via recursive feature selection, and repeated-nested cross validation (CV) (leave-one-out CV in the inner fold and 5-fold cross validation repeated 5 times in the outer fold) was used in order to ascertain generalizability. Accuracy of the prediction, positive predictive value (PPV), sensitivity and specificity were calculated as outcome measures.

Results: FES vs. healthy control was classified with 81% accuracy, 79% sensitivity and 83 specificity, and unaffected siblings vs. healthy control classification was resulted in 78% accuracy, 69% sensitivity and 86% specificity. Both comparisons were over the chance level ($p < 0.001$). However, FES vs. unaffected sibling comparison failed to reach significance with a 58% accuracy, 66% sensitivity and 46% specificity.

Conclusions: First episode schizophrenia patients and their unaffected siblings may be distinguished from healthy controls by neurocognitive tests using multivariate machine learning methods. However, it failed to separate neurocognitive features of first episode psychosis patients from that of their unaffected siblings. This supports the notion that cognitive deficits are already evident in familial risk group for psychosis (2), and they are largely comparable to the deficits in FES.

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P.631 Maintenance of effects after discontinuation of early intervention services for psychosis: Systematic review and meta-analysis

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Background: Schizophrenia is among the most debilitating disorders in the US [1], being associated with high disability [2], and enormous personal and societal cost [3]. Since people with early-phase schizophrenia generally respond better to treatment, the value of early optimized treatment has long been debated. Early Intervention Services (EIS) aim at both symptom reduction, improving functional outcomes, and reducing long-term disability during what has been called a “critical illness period”.

A recent meta-analysis (studies = 10, n = 2,176) comparing EIS versus treatment as usual (TAU) found that EIS outperformed TAU regarding all meta-analyzable outcomes [4]. However, the optimal EIS treatment duration and the question whether effects pertain after EIS discontinuation remain unclear.

Aim: To determine the maintenance of effects after discontinuation of EIS vs TAU and to compare the continuation of EIS to step-down/ less intense maintenance treatment.

Methods: Systematic literature search of PubMed/MEDLINE/ PsycInfo/clinicaltrials.gov until 04/01/2018 for (i) long-term follow-up data of randomized controlled trials comparing EIS and TAU in early psychosis, and (ii) randomized controlled trials comparing the continuation of EIS versus step-down/less intense maintenance treatment. Two independent investigators extracted data for a random effects meta-analysis.

Results: Three trials followed patients after cessation of EIS (follow-up: EIS-patients = 59.6% (224/376); TAU-patients = 60.5% (221/365), without any significant EIS vs TAU group differences regarding individually reported outcomes. Moreover, meta-analyzable outcomes were non-significant, including ≥ 1 psychiatric hospitalization (studies = 2, n = 592, EIS = 132/303, 43.6%; TAU = 138/289, 47.8%; RR = 0.87, 95%CI = 0.68-1.09, p = 0.226), number of hospitalizations (studies = 2, n = 144, SMD = 0.05, 95%CI = -0.34-0.45, p = 0.788), and number of bed days (studies = 3, n = 691, SMD = -0.08, 95%CI = -0.23-0.07, p = 0.282). These non-significant findings were in contrast to significant superiority of EIS in these same 2-3 studies at the end of the active EIS intervention.

Three trials compared continuation of EIS to less intense maintenance treatment. One study found superiority of extended EIS for adherence, work alliance and patient satisfaction, while treatment effects remained stable in both groups, while another study found a significant effect of EIS on treatment duration and both positive and negative symptom remission. The third study indicated superiority of a 12 month-extended EIS for several outcomes, such as negative and depressive symptoms, general psychopathology, global functioning, independent living skills, and work productivity. As primary data of these studies are requested, meta-analytic calculations are expected to be available at the conference.

Conclusions: Our results indicate that 9-24 months of EIS are insufficient to ensure maintenance effects of early intervention for early psychosis patients. Since only 3 studies collected data after EIS discontinuation, the non-significant findings could be due to insufficient power. However, pooled results at the end of active EIS of just these 2-3 studies yielded significant superiority for EIS, despite the low number of subjects/studies. Results of continued EIS vs step-down treatment clearly confirm the need for continuation of EIS.

Sustaining gains achieved by EIS may very well be cost-effective, yet longer-term effects of EIS applied for >2 years need to be examined. Moreover, these findings question the common belief of a “critical period” for early interventions and guidelines focusing on continued treatment only for the first two years.

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P.632 Longitudinal assessment of negative symptoms in early onset first episode psychosis

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