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### Clinical conundrum of neuroleptic malignant syndrome - A new look and a new AVS-CUV criterion

**Statement of the Study:** The research question is whether the understanding of clinical conundrum of neuroleptic malignant syndrome would become clearer when schizophrenia and affective disorders are studied separately.

**Methods:** Twenty schizophrenics and thirty affected disorder cases who developed NMS were studied between 1990 and 2001 prospectively. Modified criteria of Keck was used for the diagnosis of NMS. Only patients who developed fever, altered sensorium, extrapyramidal and autonomic symptoms are included standard statistical analysis of the data which included factor analysis correlation analysis and discriminate analysis were performed.

**Summary of Results:** Mean age of onset in schizophrenia was 32 years (18-58 yrs) and in affective disorders was 43 years (15-73 yrs). NMS developed within 9 hours of starting therapy and lasted for a mean duration of 23 days. In the affective disorder group, NMS developed over a period 17 hours and lasted for a mean duration of 11 days. Fever occurred in all the cases and earlier in schizophrenia (11.9 hours) compared to affective disorders (16.8 hours). The altered sensorium occurred within 9.6 hours in schizophrenia and 25.69 hours in affective disorder. The rigidity occurred in 38.8 hours in schizophrenia and 84.9 hours in affective disorder. Rigidity followed fever and altered sensorium in both the conditions. Autonomic symptoms occurred within 48 hours in schizophrenia and 107 hours in affective disorder. The correlation analysis showed significant correlation between NMS onset with fever and altered sensorium. Cluster analysis indicated that autonomic and extrapyramidal symptoms cause for the evolution of NMS. The factor analysis of the parameter responsible for NMS in schizophrenics are extrapyramidal symptoms 0.913, autonomic symptoms 0.858, fever 0.779, altered sensorium 0.497, whereas in affective disorders extrapyramidal symptoms 0.931, autonomic symptoms 0.955, fever 0.200, altered sensorium 0.181. Four patients died in schizophrenic group. Our discriminant analysis clearly showed the importance of the parameters with the associated probability of discrimination; autonomic symptoms (0.9), extrapyramidal symptoms (0.7), altered sensorium (0.6) and fever (0.3). The misclassification rate in the case of Schizophrenia is 15% and affective disorder is around 7%. AVS-CUV criterion can be used confidently in NMS. AVS -CUV Criterion; clinically define; autonomic symptoms and signs, extrapyramidal symptoms, altered sensorium, fever. Clinically probable: Autonomic symptoms and signs, extrapyramidal symptoms. Clinically Possible: Altered sensorium with autonomic symptoms or extrapyramidal symptoms.

- Conclusion:**
1. NMS developed earlier and took a longer time to resolve in schizophrenics compared with affective disorders
  2. Mortality occurred only in schizophrenics
  3. New AVS- CUV criteria has been added to the world literature

### Biography

Srinivas Avathvadi Venkatesan serves as an Emeritus Professor at The Tamil Nadu Dr. M.G.R. Medical University; Former Adjunct Prof. IIT Madras and Visiting Professor at Cleveland – Ohio – USA; Hershey Medical College, USA. He has been rewarded with many National & international awards like AINA AWARD- Association of Indian Neurologists in America-2001, he presented more than 60 papers in national conferences and 25 in international conferences. His published works include 30 papers & 15 chapters.

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