

# THE LANCET Psychiatry

## Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed.  
We post it as supplied by the authors.

Supplement to: Rogers JP, Pollak TA, Blackman G, David AS. Catatonia and the immune system: a review. *Lancet Psychiatry* 2019; published online June 10.  
[http://dx.doi.org/10.1016/S2215-0366\(19\)30190-7](http://dx.doi.org/10.1016/S2215-0366(19)30190-7).

## Supplementary appendix

Supplementary table 1: infective causes of catatonia with data on frequency of laboratory evidence of specific organism and references

| Infective cause                     | <i>n</i> | Suspected organisms   | <i>n</i> with laboratory evidence of specific organism |
|-------------------------------------|----------|---|--|
| Bacterial meningitis / encephalitis | 5        | <i>Borrelia burgdorferi</i> (4) <sup>1-4</sup> , unspecified (1) <sup>5</sup>   | 4  |
| Viral meningitis / encephalitis     | 26       | <i>Adenovirus</i> (1) <sup>6</sup> , <i>Cytomegalovirus</i> (1) <sup>7</sup> , <i>Coronavirus</i> (1) <sup>8</sup> , <i>Epstein Barr virus</i> (1) <sup>9</sup> , <i>HHV6</i> (1) <sup>10</sup> , <i>Herpes simplex virus</i> (8) <sup>11-18</sup> , <i>Japanese encephalitis virus</i> (1) <sup>19</sup> , <i>Measles virus</i> (2) <sup>20,21</sup> , <i>Tick-borne encephalitis virus</i> (1) <sup>22</sup> , <i>Varicella zoster virus</i> (1) <sup>23</sup> , unspecified (9) <sup>24-30</sup> | 14   |
| Cerebral malaria                    | 2        | <i>Plasmodium falciparum</i> (1) <sup>31</sup> , unspecified (1) <sup>32</sup>  | 1  |
| CNS infection unspecified           | 3        | Unspecified (3) <sup>33-35</sup>  | 0  |
| Respiratory tract infection         | 10       | <i>Influenza</i> (1) <sup>36</sup> , <i>Group A Streptococcus</i> (2) <sup>37,38</sup> , <i>Mycoplasma</i> (1) <sup>39</sup> , <i>Klebsiella</i> (1) <sup>40</sup> , <i>Epstein Barr Virus</i> (1) <sup>41</sup> , unspecified (4) <sup>42-44</sup>   | 2  |
| HIV-related                         | 22       | HIV (20) <sup>45-53</sup> , HIV and <i>John Cunningham (JC) virus</i> (2) <sup>54,55</sup>  | 22 (for HIV)   |
| Syphilis                            | 3        | <i>Treponema pallidum</i> (2) <sup>56-58</sup>  | 2  |
| Systemic bacterial infection        | 31       | <i>Coxiella burnetti</i> (1) <sup>59</sup> , <i>Salmonella typhi</i> (29) <sup>60-62</sup> , unspecified (2) <sup>55,63</sup>   | 28   |
| Systemic viral infection            | 4        | <i>Cytomegalovirus</i> (2) <sup>64,65</sup> , <i>Epstein Barr virus</i> (1) <sup>66</sup> , <i>Flavivirus</i> (1) <sup>67</sup>   | 3  |
| Prion-related disorders             | 7        | <i>PrP</i> (7) <sup>68-74</sup>   | 7  |

|              |     |   |    |
|--------------|-----|---|----|
| <b>Other</b> | 11  | <i>Flavivirus</i> vaccination (1) <sup>75</sup> , <i>Tropheryma whipplei</i> (1) <sup>76</sup> , <i>E. coli</i> (1) <sup>77</sup> , <i>Mycobacterium tuberculosis</i> (1) <sup>78</sup> , <i>Taenia solium</i> (1) <sup>79</sup> , <i>Chlamydia trachomatis</i> (1) <sup>80</sup> , <i>Trypanosoma cruzi</i> (1) <sup>81</sup> , unspecified (4) <sup>82-85</sup> | 2  |
| <b>Total</b> | 124 | -   | 85 |

Supplementary table 2: autoimmune causes of catatonia with references

| Category of autoimmunity                              | <i>n</i> | Specific disorder  | <i>n</i> |
|---|----------|--|----------|
| <b>Autoimmune thyroid disorders</b>                   | 13       | Hyperthyroid state <sup>86-88</sup>  | 3        |
|   |          | Hypothyroid state <sup>89-91</sup>   | 4        |
|   |          | Euthyroid state with thyroid antibodies <sup>92-95</sup>   | 4        |
|   |          | Thyroid state not stated <sup>96,97</sup>  | 2        |
| <b>Autoimmune encephalitis</b>                        | 259      | GABA-AR encephalitis <sup>98,99</sup>  | 2        |
|   |          | NMDAR encephalitis <sup>15,96,100-186</sup>  | 249      |
|   |          | Progressive encephalomyelitis with rigidity and myoclonus (PERM) <sup>187</sup>                                  | 1        |
|   |          | 'Voltage-gated potassium channel (VGKC) complex' encephalitis <sup>188-190</sup>                                 | 4        |
|   |          | Unspecified <sup>39,191</sup>  | 3        |
| <b>Demyelinating disorders</b>                        | 13       | Acute disseminated encephalomyelitis <sup>192,193</sup>  | 2        |
|   |          | Multiple sclerosis <sup>194-203</sup>  | 10       |
|   |          | Neuromyelitis optica <sup>204</sup>  | 1        |
| <b>Pernicious anaemia</b>                             | 4        | Pernicious anaemia <sup>205-208</sup>  | 4        |
| <b>Systemic lupus erythematosus (SLE) and related</b> | 53       | Antiphospholipid syndrome <sup>209,210</sup>   | 2        |
|   |          | SLE <sup>96,100,211-243</sup>  | 51       |
| <b>Other</b>  | 4        | Addison's disease <sup>244</sup>   | 1        |
|   |          | Crohn's disease <sup>245</sup>   | 1        |
|   |          | MOG antibody disease <sup>246</sup>  | 1        |
|   |          | Paediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS) <sup>37</sup> | 1        |
| <b>Total</b>  | 346      |  |          |

## References

1. Hesslinger B, Walden J, Normann C. Acute and long-term treatment of catatonia with risperidone. *Pharmacopsychiatry* 2001; **34**(1): 25-6.
2. Neumärker KJ, Dudeck U, Plaza P. Borrelien-Enzephalitis und Katatonie im Jugendalter. *Der Nervenarzt* 1989; **60**(2): 115-9.
3. Nagy EE, Rácz A, Urbán E, et al. Diagnostic pitfalls in a young Romanian ranger with an acute psychotic episode. *Neuropsychiatr Dis Treat* 2016; **12**: 961-7.
4. Pfister HW, Preac-Mursic V, Wilske B, et al. Catatonic syndrome in acute severe encephalitis due to *Borrelia burgdorferi* infection. *Neurology* 1993; **43**(2): 433-5.
5. Orland RM, Daghestani AN. A case of catatonia induced by bacterial meningoencephalitis. *J Clin Psychiatry* 1987; **48**(12): 489-90.
6. Alfson ED, Awosika OO, Singhal T, Fricchione GL. Lysis of catatonic withdrawal by propofol in a bone-marrow transplant recipient with adenovirus limbic encephalitis. *Psychosomatics* 2013; **54**(2): 192-5.
7. Shukla L, Narayanaswamy JC, Gopinath S, Math SB. Electroconvulsive therapy for the treatment of organic catatonia due to viral encephalitis. *The journal of ECT* 2012; **28**(3): e27-8.
8. Bogdanov R, Beelen DW, Steckel NK, Koeppen S. Coronavirus-encephalitis after Haploidentical Hematopoietic Stem Cell Transplantation (haplo-HSCT). *Oncology Research and Treatment* 2017; **40**: 62-3.
9. Derksen SJ, van der Hoeven JG, Goraj B, Molenaar JP. Severe anti NMDA encephalitis and EBV infection. *Netherlands Journal of Critical Care* 2013; **17**(5): 19-21.
10. Fraint E, Caywood E. Unusual neurologic sequelae after post-transplant acute limbic encephalitis due to HHV-6 infection. *Pediatric Blood and Cancer* 2018; **65**.
11. Chandra SR, Issac TG, Shivaram S. Catatonia in Children Following Systemic Illness. *Indian journal of psychological medicine* 2015; **37**(4): 413-8.
12. Hassan H, Thomas B, Iyer RS. Insights from a rare clinical presentation of herpes simplex encephalitis: adding to the catatonic dilemma? *The neurologist* 2011; **17**(2): 114-6.
13. Raskin DE, Frank SW. Herpes encephalitis with catatonic stupor. *Arch Gen Psychiatry* 1974; **31**(4): 544-6.
14. Schein F, Gagneux-Brunon A, Antoine JC, et al. Anti-N-methyl-D-aspartate receptor encephalitis after Herpes simplex virus-associated encephalitis: an emerging disease with diagnosis and therapeutic challenges. *Infection* 2017; **45**(4): 545-9.
15. Morris NA, Kaplan TB, Linnoila J, Cho T. HSV encephalitis-induced anti-NMDAR encephalitis in a 67-year-old woman: report of a case and review of the literature. *Journal of neurovirology* 2016; **22**(1): 33-7.
16. Chimiak-Drożdżowska E. Wirusowe zapalenie mózgu jako powikłanie etioepigenetyczne. Trudności diagnostyczne. *Psychiatria Polska* 1985; **19**(6): 500-3.
17. Wilson LG. Viral encephalopathy mimicking functional psychosis. *Am J Psychiatry* 1976; **133**(2): 165-70.
18. Saini SM, Eu CL, Wan Yahya WN, Abdul Rahman AH. Malignant catatonia secondary to viral meningoencephalitis in a young man with bipolar disorder. *Asia-Pacific psychiatry : official journal of the Pacific Rim College of Psychiatrists* 2013; **5 Suppl 1**: 55-8.
19. Doval N, Kar SK, Malhotra HS. Unfolding the mystery: Rare presentation of Japanese encephalitis as catatonia. *International Journal of Pharmaceutical Investigation* 2015; **5**(4): 159-62.
20. Prashanth LK, Taly AB, Sinha S, Ravi V. Subacute sclerosing panencephalitis (SSPE): an insight into the diagnostic errors from a tertiary care university hospital. *Journal of child neurology* 2007; **22**(6): 683-8.
21. Schreurs A, Stalberg EV, Punga AR. Indication of peripheral nerve hyperexcitability in adult-onset subacute sclerosing panencephalitis (SSPE). *Neurological sciences : official journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology* 2008; **29**(2): 121-4.

22. Abczynska M, Termanska K. OBJAWY PSYCHOPATOLOGICZNE W PRZEBIEGU NIETYPOWEGO, KLESZCZOWEGO ZAPALENIA MOZGU Psychopathological symptoms in atypical viral hemorrhagic encephalitis caused by a tick. *Psychiatria Polska* 1995; **29**(4): 547-51.
23. Helton E, Page M, Getz G, Swanson G, Smith C, Nickell P. Blood brain barrier integrity and premenstrual psychosis: A case example. *Journal of Neuropsychiatry and Clinical Neurosciences* 2016; **28**(3).
24. Sahaya K, Lardizabal D. Catatonia in encephalitis and nonconvulsive seizures: a case report and review of the literature. *Epilepsy & behavior : E&B* 2010; **17**(3): 420-5.
25. Slooter AJ, Braun KP, Balk FJ, van Nieuwenhuizen O, van der Hoeven J. Electroconvulsive therapy for malignant catatonia in childhood. *Pediatric neurology* 2005; **32**(3): 190-2.
26. Penn H, Racy J, Lapham L, Mandel M, Sandt J. Catatonic behavior, viral encephalopathy, and death. The problem of fatal catatonia. *Arch Gen Psychiatry* 1972; **27**(6): 758-61.
27. Spihtle BJ, Fliegner J, Faed JA, Hannah JB, James B. Post-infectious encephalopathy simulating functional psychosis. *The New Zealand medical journal* 1977; **85**(583): 180-1.
28. Primavera A, Fonti A, Novello P, Roccatagliata G, Cocito L. Epileptic seizures in patients with acute catatonic syndrome. *J Neurol Neurosurg Psychiatry* 1994; **57**(11): 1419-22.
29. Chaudhury S, Chakraborty P, Bharadwaj P, Augustine M. VIRAL ENCEPHALITIS PRESENTING AS CATATONIC SCHIZOPHRENIA (A Case Report). *Med J Armed Forces India*; 1994: 59-60.
30. Misra PC, Hay GG. Encephalitis presenting as acute schizophrenia. *British medical journal* 1971; **1**(5748): 532-3.
31. Rajesh KM, Sinnathamby V, Sakthi AN. Neuroleptic malignant syndrome masked by cerebral malaria. *BMJ case reports* 2013; **2013**.
32. Durrant W. Catatonia after malaria. *British medical journal* 1977; **2**(6091): 893.
33. Deaton AV, Craft S, Skenazy J. Enduring psychiatric and neuropsychologic sequelae in the post-encephalitis patient. *International journal of psychiatry in medicine* 1986; **16**(3): 275-80.
34. Modell S, Kurtz G, Müller-Spahn F, Schmölz E. Secondary psychotic symptoms in a patient with biphasic meningo-encephalitis. *European Psychiatry* 1993; **8**(6): 325-8.
35. Kanagasundram S, Chengappa KNR. Meningoencephalitis or clozapine withdrawal catatonia or both in a patient with schizophrenia. *Acta neuropsychiatrica* 2011; **23**(2): 85-7.
36. Todorova K. Olanzapine in the treatment of catatonic stupor - Two case reports and discussion. *European Neuropsychopharmacology* 2012; **22**.
37. Elia J, Dell ML, Friedman DF, et al. PANDAS with catatonia: a case report. Therapeutic response to lorazepam and plasmapheresis. *Journal of the American Academy of Child and Adolescent Psychiatry* 2005; **44**(11): 1145-50.
38. Pichot P, Samuel-Lajeunesse B, Guelfi JD. Etiological problems posed by a catatonic syndrome. *Annales Médico-Psychologiques* 1969; **1**(1): 133-9.
39. Mohammad S, Malone S, Symon B, Sinclair K. Symmetric basal ganglia involvement - Contemporary encephalitis lethargica. *Developmental medicine and child neurology* 2012; **54**: 140-1.
40. Ballesteros A, Montes L, Jaimes W, et al. case of catatonia, Klebsiella pneumoniae lung infection and intellectual disability: Differential diagnosis. *European Psychiatry* 2016; **33**.
41. Dimova PS, Bojinova V, Georgiev D, Milanov I. Acute reversible Parkinsonism in Epstein-Barr virus-related encephalitis lethargica-like illness. *Movement Disorders* 2006; **21**(4): 564-6.
42. Chiou YJ, Lee Y, Lin CC, Huang TL. A Case Report of Catatonia and Neuroleptic Malignant Syndrome With Multiple Treatment Modalities: Short Communication and Literature Review. *Medicine (Baltimore)* 2015; **94**(43): e1752.
43. Gupta R, Saigal S, Joshi R, Tagore P, Rai N, Prasad K. Unrecognized catatonia as a cause for delayed weaning in Intensive Care Unit. *Indian journal of critical care medicine : peer-reviewed, official publication of Indian Society of Critical Care Medicine* 2015; **19**(11): 693-4.
44. Rizos DV, Gkogkos C, Peritogiannis V. Catatonia in the intensive care unit. *General hospital psychiatry* 2011; **33**(1).

45. Thomson E, Weston R, Foster C. Gastrostomy administration of antiretroviral therapy across the ages. *HIV Medicine* 2015; **16**: 15-6.
46. Prakash O, Bagepally BS. Catatonia and mania in patient with AIDS: treatment with lorazepam and risperidone. *General hospital psychiatry* 2012; **34**(3): 321.e5-6.
47. Snyder S, Prenzlauer S, Maruyama N, Rose DN. Catatonia in a patient with AIDS-related dementia. *J Clin Psychiatry* 1992; **53**(11): 414.
48. Sall L, Salamon E, Allgulander C, Owe-Larsson B. Psychiatric symptoms and disorders in HIV infected mine workers in South Africa: A retrospective descriptive study of acute first admissions. *African Journal of Psychiatry (South Africa)* 2009; **12**(3): 206-12.
49. Worku B, Fekadu A. Symptom profile and short term outcome of catatonia: an exploratory clinical study. *BMC Psychiatry* 2015; **15**.
50. Hisamoto Y, Gabriel G, Verma S, Karakas C, Chari G. Catatonia as a rare manifestation of HIV associated psychosis in adolescents. *Neurology* 2017; **88**(16).
51. Huffman JC, Fricchione GL. Catatonia and Psychosis in a Patient With AIDS: Treatment With Lorazepam and Aripiprazole. *Journal of clinical psychopharmacology* 2005; **25**(5): 508-10.
52. Ferrando SJ, Nims C. HIV-associated mania treated with electroconvulsive therapy and highly-active antiretroviral therapy. *Psychosomatics* 2006; **47**(2): 170-4.
53. Volkow ND, Harper A, Munnisteri D, Clothier J. AIDS and catatonia. *J Neurol Neurosurg Psychiatry* 1987; **50**(1): 104.
54. Kumar P, Jain M. Progressive multifocal leucoencephalopathy in AIDS camouflaged with catatonia: A wolf in sheep's clothing. *Indian J Psychiatry*; 2006: 69-71.
55. Carroll BT, Anfinson TJ, Kennedy JC, Yendrek R, Boutros M, Bilon A. Catatonic disorder due to general medical conditions. *The Journal of Neuropsychiatry and Clinical Neurosciences* 1994; **6**(2): 122-33.
56. Sivakumar K, Okocha CI. Neurosyphilis and schizophrenia. *Br J Psychiatry* 1992; **161**: 251-4.
57. Lauterbach EC, Norris BK, Carter WG, Shillcutt SD. Catatonia and CPK elevation in neurosyphilis: role of plural pharmacodynamic mechanisms. *Psychopharmacol Bull* 2009; **42**(4): 53-63.
58. Pecenak J, Janik P, Vaseckova B, Trebulova K. Electroconvulsive Therapy Treatment in a Patient With Neurosyphilis and Psychotic Disorder: Case Report and Literature Review. *The journal of ECT* 2015; **31**(4): 268-70.
59. Kazar J, Hunakaova D, Missik T, Brezina R. Somatogenic psychosis in Q fever. *Bratislavske Lekarske Listy* 1978; **70**(2): 197-200.
60. Breakey WR, Kala AK. Typhoid catatonia responsive to ECT. *British medical journal* 1977; **2**(6083): 357-9.
61. Hafeiz HB. Psychiatric manifestations of enteric fever. *Acta Psychiatr Scand* 1987; **75**(1): 69-73.
62. Khosla SN. Unusual neuropsychiatric manifestations of enteric fever. *The Journal of tropical medicine and hygiene* 1991; **94**(1): 32-4.
63. Gilarovski VA. Concerning the mutual relations of exogeny and constitution in the doctrine of endogenous psychoses. *Sovetskaya Nevropatologiya, Psikhatriya, i Psikhohigiya* 1935; **4**.
64. Bhattad S, Rawat A, Gupta A, Suri D, Pandiarajan V, Singh S. Neuropsychiatric lupus with hepatitis in a child with CMV coinfection: Chicken first or the egg? *Pediatric Rheumatology* 2017; **15**.
65. Xu X, Bergman P, Willows T, et al. CMV-associated encephalitis and antineuronal autoantibodies - a case report. *BMC Neurol*; 2012: 87.
66. Rubin RL. Adolescent infectious mononucleosis with psychosis. *J Clin Psychiatry* 1978; **39**(10): 773-5.
67. Aggarwal A, Nimber JS. Dengue fever-associated catatonia. *J Neuropsychiatry Clin Neurosci* 2015; **27**(1): e66-7.
68. Chrobak AA, Dudek A, Wnuk M, et al. Brain biopsy in the diagnosis of Creutzfeldt-Jakob disease with a history of prodromal psychiatric symptoms and catatonic

behavior. *Archives of Psychiatry and Psychotherapy* 2016; **18**(2): 48-53.

69. Salhab J, Sharma S, Mohamadameen R, Valladares M, Sobrado J, Mohan K. Management of dysphagia in a patient with Creutzfeldt-Jakob disease. *American Journal of Gastroenterology*; 2015; **110**.

70. Mazhari AC, Choe H-B. Cases of sporadic creutzfeldt-jakob disease in 2 multiple sclerosis patients with rapid progression: A neuroimaging

perspective. *Journal of Neuroimaging* 2013; **23**(2): 273.

71. Ferrandiz M, Martin L, Gonzalez N, Ramio L, Molins A, Genis D. Visual disturbance as presentation of Creutzfeldt Jakob disease. Clinical and neurophysiological evaluation and follow-up. *Clinical Neurophysiology* 2010; **121**.

72. Oliveros RG, Saracibar N, Gutierrez M, et al. Catatonia due to a prion familial disease. *Schizophrenia Research* 2009; **108**(1-3): 309-10.

73. Molina M, Fekete R. Stereotypic Movements in Case of Sporadic Creutzfeldt-Jakob Disease: Possible Role of Anti-NMDA Receptor Antibodies. *Case Rep Neurol* 2012; **4**(3): 244-7.

74. Grande I, Fortea J, Gelpi E, et al. Atypical creutzfeldt-jakob disease evolution after electroconvulsive therapy for catatonic depression. *Case reports in psychiatry* 2011; **2011**: 791275.

75. Hozakova L, Slonkova J, Blahutova S. [Anti-NMDAR encephalitis as a serious adverse event probably related to yellow fever vaccination]. *Klinicka mikrobiologie a infekcni lekarstvi* 2018; **24**(1): 17-9.

76. Stan V, Su F, Weaver L, Schrift M, Gausche E. A case of rapidly progressive cognitive changes: The search for whipple's disease. *Journal of Neuropsychiatry and Clinical Neurosciences* 2016; **28**(3).

77. Chapa HO, Dawson D, Brading K, Hodnett M, Zimmermann R, Teke M. Non-Sexual Pelvic Inflammatory Disease in a Virginal Patient Resulting in Catatonic Conversion Reaction | Journal of Gynecologic Surgery. *Journal of Gynaecologic Surgery* 2016; **32**(5).

78. Selvi Y, Äzdemir PG, Atlı A, BeŞirođLu L. NÄ¶ropsikiyatrik Belirtilerle İlişkili TÄ¼berkÄ¼loz Lenfadenit: Bir Katatoni Olgusu. *Archives of Neuropsychiatry / Noropsikiatri Arsivi* 2011; **48**(4): 265-7.

79. Shah R, Chakrabarti S. Neuropsychiatric manifestations and treatment of disseminated neurocysticercosis: a compilation of three cases. *Asian J Psychiatr* 2013; **6**(4): 344-6.

80. Chopra V. What lies beneath. *Journal of Hospital Medicine* 2010; **5**: 126.

81. Sevelev G, Taratuto AH, de las Carreras MC, Leiguarda R, Nogues M. Catatonia secondary to acute Chagas' encephalitis. *J Neurol Neurosurg Psychiatry* 1987; **50**(9): 1244.

82. Virit O, Kokaçya MH, Kalenderođlu A, Altındađ A, Savaş HA. Karmaşık bir katatoni olgusu. *Klinik Psikiyatri Dergisi: The Journal of Clinical Psychiatry* 2009; **12**(1): 51-5.

83. Marusic E, Resic B, Kuzmanic-Samija R, Tomasovic M, Ursic A. Clinical manifestations of the autoimmune process of central nervous system. *European Journal of Paediatric Neurology* 2011; **15**.

84. Unal A, Bulbul F, Alpak G, Virit O, Copoglu US, Savas HA. Effective treatment of catatonia by combination of benzodiazepine and electroconvulsive therapy. *The journal of ECT* 2013; **29**(3): 206-9.

85. Challa S, Setters B. Catatonia: Not just another "mental status change". *Journal of the American Geriatrics Society* 2010; **58**.

86. Bharadwaj B, Sugaparaneetharan A, Rajkumar RP. Graves' disease presenting with catatonia: a probable case of encephalopathy associated with autoimmune thyroid disease. *Acta neuropsychiatrica* 2012; **24**(6): 374-9.

87. Urias-Uribe L, Valdez-Solis E, Gonzalez-Milan C, Ramirez-Renteria C, Ferreira-Hermosillo A. Psychosis Crisis Associated with Thyrotoxicosis due to Graves' Disease. *Case reports in psychiatry* 2017; **2017**: 6803682.

88. Saito T, Saito R, Suwa H, Yakushiji F, Takezawa K, Nakamura M. Differences in the Treatment Response to Antithyroid Drugs versus Electroconvulsive Therapy in a Case of Recurrent Catatonia due to Graves' Disease. *Case reports in psychiatry* 2012; **2012**: 868490.

89. Lee Y, House EM. Treatment of Steroid-Resistant Hashimoto Encephalopathy With Misidentification Delusions and Catatonia. *Psychosomatics* 2017; **58**(3): 322-7.

90. Shlykov MA, Rath S, Badger A, Winder GS. 'Myxoedema madness' with Capgras syndrome and catatonic features responsive to combination olanzapine and levothyroxine. *BMJ case reports* 2016; **2016**.
91. Monti G, Pugnaghi M, Ariatti A, et al. Non-convulsive status epilepticus of frontal origin as the first manifestation of Hashimoto's encephalopathy. *Epileptic disorders : international epilepsy journal with videotape* 2011; **13**(3): 253-8.
92. Lalanne L, Meriot ME, Ruppert E, Zimmermann MA, Danion JM, Vidailhet P. Attempted infanticide and suicide inaugurating catatonia associated with Hashimoto's encephalopathy: a case report. *BMC Psychiatry* 2016; **16**: 13.
93. Chen YW, Hung PL, Wu CK, Tseng PT. Severe complication of catatonia in a young patient with Hashimoto's encephalopathy comorbid with Cornelia de Lange syndrome. *The Kaohsiung journal of medical sciences* 2015; **31**(1): 60-1.
94. Muthukrishnan SR, Bunzol D. Hashimoto's encephalopathy in a pregnant female presenting with catatonia. *PM and R* 2014; **6**(9).
95. Karthik MS, Nandhini K, Subashini V, Balakrishnan R. Hashimoto's Encephalopathy Presenting with Unusual Behavioural Disturbances in an Adolescent Girl. *Case reports in medicine* 2017; **2017**: 3494310.
96. Ferrafiat V, Raffin M, Freri E, et al. A causality algorithm to guide diagnosis and treatment of catatonia due to autoimmune conditions in children and adolescents. *Schizophrenia Research* 2017: No.
97. Dong B, Qadir A, Agarwal Z, Lapid MI. Neuropsychiatric manifestations of steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT) in psychiatric patients. *American Journal of Geriatric Psychiatry* 2011; **19**(3).
98. Pettingill P, Kramer HB, Coebergh JA, et al. Antibodies to GABAA receptor  $\alpha$ 1 and  $\gamma$ 2 subunits: clinical and serologic characterization. *Neurology* 2015; **84**(12): 1233-41.
99. Nikolaus M, Knierim E, Meisel C, et al. Severe GABAA receptor encephalitis without seizures: A paediatric case successfully treated with early immunomodulation. *European journal of paediatric neurology : EJPN : official journal of the European Paediatric Neurology Society* 2018.
100. Ferrafiat V, Raffin M, Deiva K, et al. Catatonia and Autoimmune Conditions in Children and Adolescents: Should We Consider a Therapeutic Challenge? *Journal of child and adolescent psychopharmacology* 2017; **27**(2): 167-76.
101. Duan BCW, W. C.; Lin, K. L.; Wong, L. C.; Li, S. T.; Hsu, M. H.; Lin, J. J.; Fan, P. C.; Lin, M. I.; Chiu, N. C.; Lin, Y. C.; Wang, H. S.; Hung, K. L.; Lee, W. T. Variations of movement disorders in anti-N-methyl-D-aspartate receptor encephalitis: A nationwide study in Taiwan. *Medicine (Baltimore)* 2016; **95**(37): e4365.
102. Jones KC, Schwartz AC, Hermida AP, Kahn DA. A case of anti-NMDA receptor encephalitis treated with ECT. *Journal of Psychiatric Practice* 2015; **21**(5): 374-80.
103. Granata T, Matricardi S, Ragona F, et al. Pediatric NMDAR encephalitis: A single center observation study with a closer look at movement disorders. *European journal of paediatric neurology : EJPN : official journal of the European Paediatric Neurology Society* 2018; **22**(2): 301-7.
104. Mendoza MH, Huertas M. Involuntary movements associated with encefalitis autoimmune antinmda-R: Clinical case report. *Movement Disorders* 2018; **33**.
105. Ahern C, Doyle C, Kinsella J. Brain on fire: Anti-NMDA receptor encephalitis. *Irish Journal of Medical Science* 2018; **187**(3).
106. Perero MM, Reynolds J, Cahill J, Thompson B. Two sides of the NMDA receptor autoimmune encephalitis spectrum: The tip of the iceberg? *Neurology* 2018; **90**(15).
107. Medina M, Cooper JJ. Refractory catatonia due to N-methyl-D-aspartate receptor encephalitis responsive to electroconvulsive therapy: The clinical use of the clock drawing test. *The journal of ECT* 2017; **33**(4): 223-4.
108. Dang-Vu G, Willcox A, Schmidt J. New onset psychosis in young man. *Wisconsin Medical Journal* 2017; **116**(5): 272-3.



109. Barrozo HG, Hernandez D. Anti-NMDA receptor encephalitis: An emerging diagnostic challenge. *Journal of the Neurological Sciences* 2017; **381**: 530-1.
110. Herken J, Pruss H. Red flags: Clinical signs for identifying autoimmune encephalitis in psychiatric patients. *Frontiers in Psychiatry* 2017; **8**.
111. Tsutsui K, Kanbayashi T, Omori Y, et al. N-Methyl-D-aspartate receptor antibody could be a cause of catatonic symptoms in psychiatric patients: Case reports and methods for detection. *Neuropsychiatric Disease and Treatment* 2017; **13**: 339-45.
112. Tugawin RA, Bueno MF. N-Methyl-D-Aspartate-receptor encephalitis: Case series. *European Journal of Pediatrics* 2017; **176**(11): 1539-40.
113. Gough J, Coebergh J, Chandra B, Tabet N, Nilforooshan R. A new era in psychiatry: ECT and/or plasmapheresis? a new case of anti-nmda antibodies with isolated psychiatric. *Journal of Neurology, Neurosurgery and Psychiatry* 2017; **88**(8).
114. Aulicka S, Horak O, Mrazova L, et al. Malignant catatonia due to anti-NMDA-receptor encephalitis in a 15-year-old girl: Case report and summary of current knowledge. *Neuropsychiatry* 2016; **6**(4): 136-41.
115. Parmar A. Trichotilomania in a mentally retarded female: A case report. *Indian Journal of Psychiatry* 2016; **58**(5).
116. Doraiswamy A, Ramaratnam S. Relapsing and remitting anti-NMDA receptor encephalitis with prior spontaneous recovery a rare entity? *Annals of Indian Academy of Neurology* 2016; **19**(6).
117. Kremm LA, Armstrong Q, Lawler MH. Paraneoplastic ovarian teratoma anti-nmda receptor encephalitis: A case report. *PM and R* 2016; **8**(9).
118. Peacock J, Amin I, Ahmed S. Recovery in acute inpatient rehabilitation for pediatric anti-n-methyl-d-aspartate receptor encephalitis: A case report. *PM and R* 2016; **8**(9).
119. Ubod S, Bael V, Kimseng KJ. Anti- N-methyl-D-aspartate receptor encephalitis in a 15 year old male. *International Journal of Rheumatic Diseases* 2016; **19**: 63-4.
120. Gallego R, Flores A. Management and psychiatric manifestations of anti-NMDA receptor encephalitis, a case report. *European Psychiatry* 2016; **33**.
121. Kramina S, Kevere L, Bezborodovs N, et al. Acute psychosis due to non-paraneoplastic anti-NMDA-receptor encephalitis in a teenage girl: Case report. *PsyCh Journal* 2015; **4**(4): 226-30.
122. Kevere L, Kramina S, Purvina S, et al. Anti-NMDA receptor autoimmune encephalitis in psychiatric practice. *European Neuropsychopharmacology* 2015; **25**.
123. Saha R, Rathee R. Anti-NMDA receptor encephalitis presenting as acute psychosis and catatonia. *Indian Journal of Psychiatry* 2015; **57**(5).
124. Mythri SV, Mathew V. Anti-NMDA receptor encephalitis presenting as catatonia: A case report. *Indian Journal of Psychiatry* 2015; **57**(5).
125. Kanbayashi T, Tsutsui K, Omori Y, et al. Anti-NMDA encephalitis in psychiatry; malignant catatonia, atypical psychosis and ECT. *Clinical Neurology* 2014; **54**(12): 1103-6.
126. Kuppaswamy PS, Takala CR, Sola CL. Management of psychiatric symptoms in anti-NMDAR encephalitis: A case series, literature review and future directions. *General hospital psychiatry* 2014; **36**(4): 388-91.
127. Turkdogan D, Oregul AC, Zaimoglu S, Ekin G. Anti-N-Methyl-d-Aspartate (Anti-NMDA) receptor encephalitis: Rapid and sustained clinical improvement with steroid therapy starting in the late phase. *Journal of child neurology* 2014; **29**(5): 684-7.
128. Mehr SR, Wiley MA, Neeley RC. Anti-n-methyl-d-aspartate receptor encephalitis (NMDARE) induced autonomic instability necessitating pacemaker placement: A case study. *Neurocritical Care* 2014; **21**(1).
129. Yuksel G, Cetinay-Aydin P, Burhan HS, Aydin N. Postpartum Anti-N-Methyl-D-Aspartate (NMDA) receptor encephalitis presenting psychiatric symptoms. *Klinik Psikofarmakoloji Bulteni* 2014; **24**.
130. Yigman F, Ozdel K, Efe C, Atmar M. A catatonic depression case; remitted depression and recurrent catatonia: A case report. *Klinik Psikofarmakoloji Bulteni* 2014; **24**.

131. Paholpak P, Rangsihaje P, Kriengburapa K, Tiamkao S, Kasemsap N, Mendez MF. Catatonia in anti-NMDA-encephalitis: Case reports and review of the literature. *Journal of Neuropsychiatry and Clinical Neurosciences* 2014; **26**(2): 20.
132. Yoon W, Lee S, Lee J, Joo Y, Kim C. A treatable cause of catatonia: Anti-NMDA receptor encephalitis in a young woman. *Schizophrenia Research* 2014; **153**.
133. Grebenciucova E. Catatonia: A Duel of Hashimoto's Encephalopathy and Anti NMDA Receptor Encephalitis (P5.166). 2014.
134. Fousse M, Becker C, Fasbender K, et al. Erstmanifestation eines organischen manisch-schizophreniformen Syndroms mit nachfolgender Katatonie bei NMDA-Rezeptor-Antikörper-positiver Encephalitis First occurrence of an organic manic schizophreniform syndrome followed by catatonia induced by anti-NMDA-receptor encephalitis. *Fortschritte der Neurologie Psychiatrie* 2013; **81**(4): 206-9.
135. Ramanathan S, Wong CH, Fung VS. Long duration between presentation of probable anti-N-methyl-D-aspartate receptor encephalitis and either clinical relapse or positive serum autoantibodies. *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia* 2013; **20**(9): 1322-3.
136. Frank MG, Ladanyi C, Brittain P. Bugs, drugs, or immune system flubs, what causes limbic encephalitis? Moreover, what causes anti-methyl-d-aspartate receptor encephalitis? *Journal of General Internal Medicine* 2013; **28**.
137. Antonio CLM, Lee LV, Ortiz MH. Movement disorders in children with acute encephalitis admitted at a tertiary hospital from 2008-2012. *Movement Disorders* 2013; **28**.
138. Specht S, Hethey S, Franck EM, Christen HJ. Anti-N-methyl-d-aspartate-receptor encephalitis in a patient with acute organic brain syndrome with catatonia. *Neuropediatrics* 2013; **44**(2).
139. Kuo YL, Tsai HF, Lai MC, Lin CH, Yang YK. Anti-NMDA receptor encephalitis with the initial presentation of psychotic mania. *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia* 2012; **19**(6): 896-8.
140. Mann A, Liu N, Afzal KI, Machado NM, Mazin AH, Silver K. A multidisciplinary approach to the treatment of Anti-NMDA-receptor antibody encephalitis: A case and review of the literature. *Journal of Neuropsychiatry and Clinical Neurosciences* 2012; **24**(2): 247-54.
141. Mukhtyar B, Krishnakumar D, Chitre M. NMDAR encephalitis or catatonic psychosis? A diagnostic and therapeutic challenge. *Developmental medicine and child neurology* 2012; **54**: 46.
142. Millichap JJ, Laux LC, Nordli Jr DR, Goldstein JL, Stack CV, Wainwright MS. Ictal asystole and anti-N-methyl-D-aspartate receptor antibody encephalitis. *Pediatrics* 2011; **127**(3).
143. McCullagh BG, Vassallo G. Anti-N-methyl-D-aspartate receptor encephalitis: An important differential. *European Journal of Paediatric Neurology* 2009; **13**.
144. Gough JL, Coebergh J, Chandra B, Nilforooshan R. Electroconvulsive therapy and/or plasmapheresis in autoimmune encephalitis? *World journal of clinical cases* 2016; **4**(8): 223-8.
145. Mythri SV, Mathew V. Catatonic Syndrome in Anti-NMDA Receptor Encephalitis. *Indian journal of psychological medicine* 2016; **38**(2): 152-4.
146. Dhossche D, Fink M, Shorter E, Wachtel LE. Anti-NMDA receptor encephalitis versus pediatric catatonia. *Am J Psychiatry* 2011; **168**(7): 749-50; author reply 50.
147. Yu AYX, Moore FGA. Paraneoplastic encephalitis presenting as postpartum psychosis. *Psychosomatics: Journal of Consultation and Liaison Psychiatry* 2011; **52**(6): 568-70.
148. Hermans T, Santens P, Matton C, et al. Anti-NMDA receptor encephalitis: still unknown and underdiagnosed by physicians and especially by psychiatrists? *Acta clinica Belgica* 2017: 1-4.
149. Iriundo O, Zaldibar-Gerrikagoitia J, Rodríguez T, García JM, Aguilera L. Anti-NMDA (a-NMDAR) receptor encephalitis related to acute consumption of metamphetamine: Relevance of differential diagnosis. *Revista española de anestesiología y reanimación* 2017; **64**(3): 172-6.
150. Kruse JL, Lapid MI, Lennon VA, et al. Psychiatric Autoimmunity: N-Methyl-D-Aspartate Receptor IgG and Beyond. *Psychosomatics* 2015; **56**(3): 227-41.

151. Lee EM, Kang JK, Oh JS, Kim JS, Shin YW, Kim CY. 18F-Fluorodeoxyglucose Positron-Emission Tomography Findings with Anti-N-Methyl-D-Aspartate Receptor Encephalitis that Showed Variable Degrees of Catatonia: Three Cases Report. *Journal of epilepsy research* 2014; **4**(2): 69-73.
152. DeSena AD, Greenberg BM, Graves D. Three phenotypes of anti-N-methyl-D-aspartate receptor antibody encephalitis in children: prevalence of symptoms and prognosis. *Pediatric neurology* 2014; **51**(4): 542-9.
153. Khadem GM, Heble S, Kumar R, White C. Anti-N-methyl-D-aspartate receptor antibody limbic encephalitis. *Internal medicine journal* 2009; **39**(1): 54-6.
154. Keller S, Roitman P, Ben-Hur T, Bonne O, Lotan A. Anti-NMDA Receptor Encephalitis Presenting as an Acute Psychotic Episode in a Young Woman: An Underdiagnosed yet Treatable Disorder. *Case reports in psychiatry* 2014; **2014**: 868325.
155. Voice J, Ponterio JM, Lakhi N. Psychosis secondary to an incidental teratoma: A "heads-up" for psychiatrists and gynecologists. *Archives of Women's Mental Health* 2017; **20**(5): 703-7.
156. Heekin RD, Catalano MC, Frontera AT, Catalano G. Anti-NMDA Receptor Encephalitis in a Patient with Previous Psychosis and Neurological Abnormalities: A Diagnostic Challenge. *Case reports in psychiatry* 2015; **2015**: 253891.
157. De Ciervo F, Willimburgh V, Finvarb G. [N-Methyl-D-Aspartate receptor encephalitis: An adolescent case report and literature review. How to manage neuropsychiatric symptoms]. *Vertex (Buenos Aires, Argentina)* 2017.
158. Zubair UB, Majid H. Anti-NMDA receptor encephalitis in a young girl with altered behaviour and abnormal movements. *Journal of the College of Physicians and Surgeons Pakistan* 2018; **28**(8): 643-4.
159. Lwanga A, Kamson DO, Wilkins TE, et al. Occult teratoma in a case of N-methyl-D-aspartate receptor encephalitis. *Neuroradiology Journal* 2018; **31**(4): 415-9.
160. Schumacher LT, Mann AP, MacKenzie JG. Agitation Management in Pediatric Males with Anti-N-Methyl-D-Aspartate Receptor Encephalitis. *Journal of child and adolescent psychopharmacology* 2016; **26**(10): 939-43.
161. Splendiani A, Felli V, Di Sibio A, et al. Magnetic resonance imaging and magnetic resonance spectroscopy in a young male patient with anti-N-methyl-D-aspartate receptor encephalitis and uncommon cerebellar involvement: A case report with review of the literature. *Neuroradiology Journal* 2016; **29**(1): 30-5.
162. Pereira F, Dias C, Pedrosa S, Martins H. Anti-NMDA limbic encephalitis: A case of secondary epilepsy. *Journal of Neurosurgical Anesthesiology* 2016; **28**(2).
163. Thomas AG, Madhusudanan M, Thomas R, Byju P. Seronegative anti-n-methyl-d-aspartate receptor encephalitis. *Annals of Indian Academy of Neurology* 2016; **19**(6).
164. Ponte A, Gama Marques J, Carvalho Gil L, Nobrega C, Pinheiro S, Brito A. Catatonic schizophrenia vs anti-NMDA receptor encephalitis-A video case report. *European Psychiatry* 2016; **33**.
165. Cercos Lopez A, Cancino Botello MC, Chavarria Romero V, Sugranyes Ernest G. Cotard syndrome in a young man? *European Psychiatry* 2016; **33**.
166. Thobani SA, Li M, Scott LG, Kwong KY, Govani RS. An atypical case of pancreatic mass causing anti-NMDA receptor encephalitis. *Journal of Allergy and Clinical Immunology* 2016; **137**(2).
167. Guan W, Fu Z, Jing L, et al. Non-tumor-associated anti-N-methyl-d-aspartate (NMDA) receptor encephalitis in Chinese girls with positive anti-thyroid antibodies. *Journal of child neurology* 2015; **30**(12): 1582-5.
168. Almuslamani A, Mahmood F. First Bahraini adolescent with anti-NMDAR-Ab encephalitis. *Qatar Medical Journal* 2015; **2015**(1).
169. Endres D, Perlov E, Maier S, et al. Hypoglutamatergic state is associated with reduced cerebral glucose metabolism in anti-NMDA receptor encephalitis: A case report. *BMC Psychiatry* 2015; **15**(1).

170. Clark RM, Lynch MP, Growdon WB, Rueda BR, Zukerberg LR, Kolp R. The N-methyl-D-aspartate receptor, a precursor to N-methyl-D-aspartate receptor encephalitis, is found in the squamous tissue of ovarian teratomas. *International Journal of Gynecological Pathology* 2014; **33**(6): 598-606.
171. Guo YH, Kuan TS, Hsieh PC, Lien WC, Chang CK, Lin YC. Rehabilitation for a child with recalcitrant anti-N-methyl-D-aspartate receptor encephalitis: Case report and literature review. *Neuropsychiatric Disease and Treatment* 2014; **10**: 2263-7.
172. Chys S, Lemoyne S, Hachimi Idrissi S. 'Easy, the patient is crazy!' Or not? *Acta clinica Belgica* 2014; **69**.
173. Sousa S, Pita F, Carmona C, Guerreiro R. Kleine-Levin syndrome as a manifestation of anti-NMDAR encephalitis. *Journal of Neurology* 2014; **261**.
174. Leyboldt F, Gelderblom M, Schottle D, Hoffmann S, Wandinger KP. Recovery from severe frontotemporal dysfunction at 3 years after N-methyl-d-aspartic acid (NMDA) receptor antibody encephalitis. *Journal of Clinical Neuroscience* 2013; **20**(4): 611-3.
175. Hansen HC, Klingbeil C, Dalmau J, Li W, Benedikt W, Wandinger KP. Persistent intrathecal antibody synthesis 15 years after recovering from anti-n-methyl-d-aspartate receptor encephalitis. *Archives of Neurology* 2013; **70**(1): 117-9.
176. Mastroyianni S, Voudris K, Mavrikou M, Triantafyllidou A, Maggina P, Katsarou E. Anti-NMDAR encephalitis; presentation of 3 pediatric cases with full recovery. *European Journal of Paediatric Neurology* 2013; **17**.
177. Wingfield T, Vas A, Wilkins E, et al. Autoimmune encephalitis: A case series and comprehensive review of the literature. *QJM* 2011; **104**(11): 921-31.
178. Jacobs R. The catatonic stuporous child: A severe case of anti-NMDA receptor encephalitis. *Journal of Hospital Medicine* 2011; **6**(4).
179. Schimmel M, Bien CG, Vincent A, Schenk W, Penzien J. Successful treatment of anti-N-methyl-D-aspartate receptor encephalitis presenting with catatonia. *Arch Dis Child* 2009; **94**(4): 314-6.
180. Braakman HM, Moers-Hornikx VM, Arts BM, Hupperts RM, Nicolai J. Pearls & Oysters: electroconvulsive therapy in anti-NMDA receptor encephalitis. *Neurology* 2010; **75**(10): e44-6.
181. Matsumoto T, Matsumoto K, Kobayashi T, Kato S. Electroconvulsive therapy can improve psychotic symptoms in anti-NMDA-receptor encephalitis. *Psychiatry and Clinical Neurosciences* 2012; **66**(3): 242-3.
182. Sunwoo JS, Jung DC, Choi JY, et al. Successful Treatment of Refractory Dyskinesia Secondary to Anti-N-Methyl-D-Aspartate Receptor Encephalitis With Electroconvulsive Therapy. *The journal of ECT* 2016; **32**(3): e13-4.
183. Sansing LH, Tuzun E, Ko MW, Baccon J, Lynch DR, Dalmau J. A patient with encephalitis associated with NMDA receptor antibodies. *Nature clinical practice Neurology* 2007; **3**(5): 291-6.
184. Kaestner F, Mostert C, Behnken A, et al. Therapeutic strategies for catatonia in paraneoplastic encephalitis. *World J Biol Psychiatry*. England; 2008: 236-40.
185. Dalmau J, Gleichman AJ, Hughes EG, et al. Anti-NMDA-receptor encephalitis: case series and analysis of the effects of antibodies. *The Lancet Neurology* 2008; **7**(12): 1091-8.
186. Tsutsui K, Kanbayashi T, Tanaka K, et al. Anti-NMDA-receptor antibody detected in encephalitis, schizophrenia, and narcolepsy with psychotic features. *BMC Psychiatry* 2012; **12**: 37.
187. Witek N, Gera A, Comella C, Hebert C. In the eye of the beholder: A patient with catatonia found to have progressive encephalomyelitis with rigidity and myoclonus. *Neurology* 2018; **90**(15).
188. Bera KD, Pettingill P, Vincent A, Iyer A, Kumar R, Kneen R. Neuropsychiatric and parkinsonian features in two children with VGKC-complex autoantibody encephalitis. *Developmental medicine and child neurology* 2014; **56**: 6-7.
189. McTague A, Curran A, Kneen R, Inbasagaran A, Vincent A. An unusual case of voltage-gated potassium channel complex antibody-mediated encephalitis presenting with catatonia, cognitive

regression, and neuroleptic malignant syndrome. *Developmental medicine and child neurology* 2012; **54**: 17-8.

190. Iyer A, McTague A, Curran A, Inbasagan A, Vincent A, Kneen R. VGKC-complex antibody mediated encephalitis presenting with psychiatric features and neuroleptic malignant syndrome - further expanding the phenotype. *Developmental medicine and child neurology* 2012; **54**(6): 575-6.

191. Ferrafiat V, Raffin M, Gianniteli M, et al. Auto-immunite et psychiatrie de l'enfant et de l'adolescent Autoimmune disorders and psychiatry in youth. *Neuropsychiatrie de l'Enfance et de l'Adolescence* 2017; **65**(2): 99-109.

192. Bachmann S, Schroder J. Catatonic syndrome related to acute disseminated encephalomyelitis (ADEM). *Schizophr Res* 2006; **87**(1-3): 336-7.

193. Munoz Zuniga JF, Ramirez-Bermudez J, Flores Rivera Jde J, Corona T. Catatonia and kluevrbucy syndrome in a patient with acute disseminated encephalomyelitis. *J Neuropsychiatry Clin Neurosci* 2015; **27**(2): e161-2.

194. Kahn DA, Muzyk AJ, Christopher EJ, Gagliardi JP. Use of aripiprazole in a patient with multiple sclerosis presenting with paranoid psychosis. *Journal of Psychiatric Practice* 2010; **16**(6): 420-4.

195. Mattingly G, Baker K, Zorumski CF, Figiel GS. Multiple sclerosis and ECT: possible value of gadolinium-enhanced magnetic resonance scans for identifying high-risk patients. *J Neuropsychiatry Clin Neurosci* 1992; **4**(2): 145-51.

196. Pontikes TK, Dinwiddie SH. Electroconvulsive therapy in a patient with multiple sclerosis and recurrent catatonia. *The journal of ECT* 2010; **26**(4): 270-1.

197. Shoja Shafti S, Nicknam Z, Fallah P, Zamani L. Early psychiatric manifestation in a patient with primary progressive multiple sclerosis. *Archives of Iranian medicine* 2009; **12**(6): 595-8.

198. Blanc F, Berna F, Fleury M, et al. [Inaugural psychotic events in multiple sclerosis?]. *Revue neurologique* 2010; **166**(1): 39-48.

199. Hung YY, Huang TL. Lorazepam and diazepam for relieving catatonic features in multiple sclerosis. *Progress in neuro-psychopharmacology & biological psychiatry*. England; 2007: 1537-8.

200. Corruble E, Awad H, Chouinard G, Hardy P. ECT in delusional depression with multiple sclerosis. *Am J Psychiatry*. United States; 2004: 1715.

201. Mendez MF. Multiple sclerosis presenting as catatonia. *International journal of psychiatry in medicine* 1999; **29**(4): 435-41.

202. Boudin G, Nick J, Bureau G, Blanchet G, Hillemand B. [State of stupor with catatonia revealing multiple sclerosis]. *Revue neurologique* 1953; **88**(4): 273-5.

203. Pine DS, Douglas CJ, Charles E, Davies M, Kahn D. Patients with multiple sclerosis presenting to psychiatric hospitals. *J Clin Psychiatry* 1995; **56**(7): 297-306; discussion 7-8.

204. Alam A, Patel R, Locicero B, Rivera N. Neuromyelitis optica presenting with psychiatric symptoms and catatonia: a case report. *General hospital psychiatry* 2015; **37**(3): 274.e1-2.

205. Bram D, Bubrovsky M, Durand JP, Lefevre G, Morell-Dubois S, Vaiva G. Pernicious anemia presenting as catatonia: correlating vitamin B12 levels and catatonic symptoms. *General hospital psychiatry* 2015; **37**(3): 273.e5-7.

206. Abi-Abib RC, Ramalho FV, Conceicao FL, et al. Psychosis as the initial manifestation of pernicious anemia in a type 1 diabetes mellitus patient. *Endocrinologist* 2010; **20**(5): 224-5.

207. Jauhar S, Blackett A, Srireddy P, McKenna PJ. Pernicious anaemia presenting as catatonia without signs of anaemia or macrocytosis. *Br J Psychiatry* 2010; **197**(3): 244-5.

208. Salam SA, Kilzieh N. Lorazepam treatment of psychogenic catatonia: an update. *J Clin Psychiatry* 1988; **49 Suppl**: 16-21.

209. Cardinal RN, Shah DN, Edwards CJ, Hughes GR, Fernandez-Egea E. Psychosis and catatonia as a first presentation of antiphospholipid syndrome. *Br J Psychiatry* 2009; **195**(3): 272.

210. Chiba Y, Odawara T. [Catatonia in the elderly]. *Nihon rinsho Japanese journal of clinical medicine* 2013; **71**(10): 1804-9.

211. Junior Rabello FAPC, Luz DC, de Figueiredo ECQ, Gaudencio EO, Coutinho LCQM, de Azevedo WF. Catatonia secundaria a lupus eritematoso sistêmico. *Catatonia due to systemic lupus erythematosus*. *Jornal Brasileiro de Psiquiatria* 2014; **63**(2): 177-81.
212. Ali A, Taj A, Misbah uz Z. Lupus catatonia in a young girl who presented with fever and altered sensorium. *Pakistan journal of medical sciences* 2014; **30**(2): 446-8.
213. Aarya KR, Grover S, Sharma A. An association of multiple psychiatric manifestations with CNS lupus and use of steroids: A case report. *Indian Journal of Psychiatry* 2012; **54**.
214. Consoli A, Raffin M, Laurent C, et al. Medical and developmental risk factors of catatonia in children and adolescents: A prospective case-control study. *Schizophrenia Research* 2012; **137**(1-3): 151-8.
215. de Assis Pinto Cabral Júnior Rabello F, Luz DC, de Figueiredo ECQ, de Oliveira Gaudêncio E, Mendonça Coutinho LCQ, de Azevedo WF. Catatonia due to systemic lupus erythematosus. *Jornal Brasileiro de Psiquiatria* 2014; **63**(2): 177-81.
216. Lee WT. Neuropsychiatric systemic lupus erythematosus. *Casebook of neuropsychiatry* 2013: 231-486.
217. Lichtenstein A, Calish I, Oliveira RM, Miguel Filho EC, Rocha AS. [Catatonic syndrome caused by autoimmune disease: spontaneous remission]. *Revista do Hospital das Clínicas* 1989; **44**(6): 312-5.
218. Ampélas JF, Wattiaux MJ, Van Amerongen AP. [Psychiatric manifestations of lupus erythematosus systemic and Sjogren's syndrome]. *L'Encephale* 2001; **27**(6): 588-99.
219. Sosa MZP, Garrido SG. Electroconvulsive therapy in autoimmune and vascular pathology. *Journal of ECT* 2017; **33**(3).
220. Louarn F, Mas JL, Degos JD. ATTEINTE DU SYSTEME NERVEUX CENTRAL AU COURS DU LUPUS ERYTHEMATEUX DISSEMINÉ. Central nervous system lesions in systemic lupus erythematosus (SLE). *Revue neurologique* 1984; **140**(2): 110-6.
221. Grover S, Parakh P, Sharma A, Rao P, Modi M, Kumar A. Catatonia in systemic lupus erythematosus: a case report and review of literature. *Lupus* 2013; **22**(6): 634-8.
222. Leon T, Aguirre A, Pesce C, Sanhueza P, Toro P. Electroconvulsive therapy for catatonia in juvenile neuropsychiatric lupus. *Lupus* 2014; **23**(10): 1066-8.
223. Lanham JG, Brown MM, Hughes GR. Cerebral systemic lupus erythematosus presenting with catatonia. *Postgrad Med J* 1985; **61**(714): 329-30.
224. Marra D, Amoura Z, Soussan N, et al. Plasma exchange in patients with stuporous catatonia and systemic lupus erythematosus. *Psychother Psychosom* 2008; **77**(3): 195-6.
225. Daradkeh TK, Nasrallah NS. Lupus catatonia: a case report. *Pharmatherapeutica* 1987; **5**(2): 142-4.
226. Alao AO, Chlebowski S, Chung C. Neuropsychiatric systemic lupus erythematosus presenting as bipolar I disorder with catatonic features. *Psychosomatics* 2009; **50**(5): 543-7.
227. Pustilnik S, Trutia A. Catatonia as the presenting symptom in systemic lupus erythematosus. *J Psychiatr Pract* 2011; **17**(3): 217-21.
228. Ditmore BG, Malek-Ahmadi P, Mills DM, Weddige RL. Manic Psychosis and Catatonia Stemming from Systemic Lupus Erythematosus: Response to ECT. *Convulsive therapy* 1992; **8**(1): 33-7.
229. Fricchione GL, Kaufman LD, Gruber BL, Fink M. Electroconvulsive therapy and cyclophosphamide in combination for severe neuropsychiatric lupus with catatonia. *Am J Med* 1990; **88**(4): 442-3.
230. Fam J, Lee TS, Lee HY, Ng BY. Electroconvulsive therapy for catatonia in neuropsychiatric systemic lupus erythematosus. *The journal of ECT* 2010; **26**(2): 143-4.
231. Perisse D, Amoura Z, Cohen D, et al. Case study: effectiveness of plasma exchange in an adolescent with systemic lupus erythematosus and catatonia. *Journal of the American Academy of Child and Adolescent Psychiatry* 2003; **42**(4): 497-9.
232. Breliniski L, Cottencin O, Guardia D, et al. Catatonia and systemic lupus erythematosus: a clinical study of three cases. *General hospital psychiatry* 2009; **31**(1): 90-2.

233. Wang HY, Huang TL. Benzodiazepines in catatonia associated with systemic lupus erythematosus. *Psychiatry Clin Neurosci* 2006; **60**(6): 768-70.
234. Kronfol Z, Schlessner M, Tsuang MT. Catatonia and systemic lupus erythematosus. *Dis Nerv Syst* 1977; **38**(9): 729-31.
235. Mac DS, Pardo MP. Systemic lupus erythematosus and catatonia: a case report. *J Clin Psychiatry* 1983; **44**(4): 155-6.
236. Prins JM, de Glas-Vos JW. [Cerebral disseminated lupus erythematosus; brain-racking for patient and physician]. *Ned Tijdschr Geneesk* 1990; **134**(46): 2252-6.
237. Youmans CR, Jr., De Groot WJ, Marshall R, Morettin LB, Derrick JR. Needle biopsy of the lung in diffuse parenchymal disease An analysis of 151 cases. *American journal of surgery* 1970; **120**(5): 637-43.
238. Pilz P, Wallnöfer H, Klein J. [Thrombophlebitis of internal cerebral veins in a case of systemic lupus erythematosus (author's transl)]. *Archiv fur Psychiatrie und Nervenkrankheiten* 1980; **228**(1): 31-43.
239. Malur C, Pasol E, Francis A. ECT for prolonged catatonia. *The journal of ECT* 2001; **17**(1): 55-9.
240. Mon T, L'Ecuyer S, Farber NB, et al. The use of electroconvulsive therapy in a patient with juvenile systemic lupus erythematosus and catatonia. *Lupus* 2012; **21**(14): 1575-81.
241. Munoz-Malaga A, Anglada JC, Paez M, Giron JM, Barrera A. [Psychosis as the initial manifestation of systemic lupus erythematosus: the role of lupus band test and anti-ribosomal antibodies]. *Rev Neurol* 1999; **28**(8): 779-81.
242. Tishler M, Abramov AL. Systemic lupus erythematosus presenting as catatonic schizophrenia. *Clinical rheumatology* 1985; **4**(3): 340-2.
243. Butala J, Swanson G, Chopra A. Catatonia as a Manifestation of Cerebral Venous Sinus Thrombosis. *The primary care companion for CNS disorders* 2018; **20**(1).
244. Koenig M, Duband S, Charmion S, Cathebras P, Camdessanche JP, Antoine JC. Myelinolyse extrapontine d'evolution favorable au cours d'une polyendocrinopathie auto-immune Extrapontine myelinolysis of favorable outcome in a patient with autoimmune polyglandular syndrome. *Revue de Medecine Interne* 2005; **26**(1): 65-8.
245. Reimer J, Fink T, Blaker M, Schafer I, Otte C. Successful treatment of psychosis with infliximab in a patient with Crohn's disease. *Schizophr Res. Netherlands*; 2009: 194-5.
246. Suzuki M, Kato H, Ohashi T. Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis and neuropsychiatric autoimmune encephalopathy. *European Journal of Neurology* 2016; **23**: 853.