

Neuro aktuell

Ausgabe 4-2020

Literatur

Schwerpunkt: Multiple Sklerose

Titel: Multiple Sklerose und Kinderwunsch – Erfahrungen aus dem Deutschen Multiple Sklerose und Kinderwunschregister (S. 12–21)

Autoren: S. Thiel, A. I. Ciplea, R. Gold und K. Hellwig

Literatur:

1. Orton SM et al. Sex ratio of multiple sclerosis in Canada: a longitudinal study. *The Lancet Neurology* 2006; 5(11): 932–6
2. Compston A & Coles A. Multiple sclerosis. *Lancet* (London, England) 2008; 372(9648): 1502–17
3. Willer CJ et al. Twin concordance and sibling recurrence rates in multiple sclerosis. *Proc Natl Acad Sci USA* 2003; 100(22): 12877–82
4. Houtchens MK et al. Contraception for women with multiple sclerosis: Guidance for healthcare providers. *Multiple sclerosis* (Houndmills, Basingstoke, England) 2017; 23(6): 757–64
5. Zhu B et al. Evaluation of Potential Drug-Drug Interaction Between Delayed-Release Dimethyl Fumarate and a Commonly Used Oral Contraceptive (Norgestimate/Ethinyl Estradiol) in Healthy Women. *Clin Pharmacol Drug Dev* 2017; 6(6): 604–13
6. David OJ et al. Pharmacokinetics of fingolimod (FTY720) and a combined oral contraceptive coadministered in healthy women: drug-drug interaction study results. *Int J Clin Pharmacol Ther* 2012; 50(8): 540–4
7. Nielsen NM et al. Reproductive history and risk of multiple sclerosis. *Epidemiology* (Cambridge, Mass) 2011; 22(4): 546–52
8. Lombardi G et al. Female sexual dysfunction and hormonal status in multiple sclerosis patients. *The journal of sexual medicine* 2011; 8(4): 1138–46
9. Thone J et al. Serum anti-Müllerian hormone levels in reproductive-age women with relapsing-remitting multiple sclerosis. *Multiple sclerosis* (Houndmills, Basingstoke, England) 2015; 21(1): 41–7
10. Hellwig K & Correale J. Artificial reproductive techniques in multiple sclerosis. *Clinical immunology* (Orlando, Fla) 2013; 149(2): 219–24
11. Laplaud DA et al. Increase in multiple sclerosis relapse rate following in vitro fertilization. *Neurology* 2006; 66(8): 1280–1
12. Hellwig K et al. Increase in relapse rate during assisted reproduction technique in patients with multiple sclerosis. *Eur Neurol* 2009; 61(2): 65–8
13. Hellwig K et al. Increased MS relapse rate during assisted reproduction technique. *Journal of neurology* 2008; 255(4): 592–3
14. Michel L et al. Increased risk of multiple sclerosis relapse after in vitro fertilisation. *Journal of neurology, neurosurgery, and psychiatry* 2012; 83(8): 796–802
15. Correale J et al. Increase in multiple sclerosis activity after assisted reproduction technology. *Annals of neurology* 2012; 72(5): 682–94

16. Bove R et al. Effect of assisted reproductive technology on multiple sclerosis relapses: Case series and meta-analysis. *Multiple sclerosis* (Houndmills, Basingstoke, England) 2019; 1352458519865118
17. Bove R et al. Management of multiple sclerosis during pregnancy and the reproductive years: a systematic review. *Obstetrics and gynecology* 2014; 124(6): 1157–68
18. MacDonald SC et al. Pregnancy Outcomes in Women With Multiple Sclerosis. *Am J Epidemiol* 2019; 188(1): 57–66
19. Hellwig K et al. Reproductive counselling, treatment and course of pregnancy in 73 German MS patients. *Acta neurologica Scandinavica* 2008; 118(1): 24–8
20. Dahl J et al. Pregnancy, delivery, and birth outcome in women with multiple sclerosis. *Neurology* 2005; 65(12): 1961–3
21. Pasto L et al. Epidural analgesia and cesarean delivery in multiple sclerosis post-partum relapses: the Italian cohort study. *BMC neurology* 2012; 12: 165
22. Vukusic S et al. Pregnancy and multiple sclerosis (the PRIMs study): clinical predictors of post-partum relapse. *Brain : a journal of neurology* 2004; 127(Pt 6): 1353–60
23. Confavreux C & Vukusic S. The clinical course of multiple sclerosis. *Handb Clin Neurol* 2014; 122: 343–69
24. Langer-Gould A et al. Pregnancy-related Relapses in a Large, Contemporary Multiple Sclerosis Cohort: No Increased Risk in the Postpartum Period. 71st AAN Annual Meeting; May 4-10, 2019; 71st AAN Annual Meeting 2019
25. D'Hooghe M B et al. Female gender and reproductive factors affecting risk, relapses and progression in multiple sclerosis. *Gynecol Obstet Invest.* 2013; 75(2): 73–84
26. Runmarker B & Andersen O. Pregnancy is associated with a lower risk of onset and a better prognosis in multiple sclerosis. *Brain : a journal of neurology* 1995; 118 (Pt 1): 253–61
27. D'Hooghe M B et al. Long-term effects of childbirth in MS. *Journal of neurology, neurosurgery, and psychiatry* 2010; 81(1): 38–41
28. Jokubaitis VG et al. Predictors of long-term disability accrual in relapse-onset multiple sclerosis. *Annals of neurology* 2016; 80(1): 89–100
29. Yang YM et al. Estrogen-dependent epigenetic regulation of soluble epoxide hydrolase via DNA methylation. *Proc Natl Acad Sci USA* 2018; 115(3): 613–8
30. Gapp K et al. Potential of Environmental Enrichment to Prevent Transgenerational Effects of Paternal Trauma *Neuropsychopharmacology* 2016; 41(11): 2749–58
31. Kemp MW et al. The clinical use of corticosteroids in pregnancy. *Hum Reprod Update* 2016; 22(2): 240–59
32. Walker BE. Induction of cleft palate in rabbits by several glucocorticoids. *Proc Soc Exp Biol Med* 1967; 125(4): 1281–4
33. Pinsky L & Digeorge AM. CLEFT PALATE IN THE MOUSE: A TERATOGENIC INDEX OF GLUCOCORTICOID POTENCY. *Science* 1965; 147(3656): 402–3
34. Shah RM & Chaudhry AP. Hydrocortisone-induced cleft palate in hamsters. *Teratology* 1973; 7(2): 191–4
35. Park-Wyllie L et al. Birth defects after maternal exposure to corticosteroids: prospective cohort study and meta-analysis of epidemiological studies. *Teratology* 2000; 62(6): 385–92
36. de Steenwinkel FDO et al. Does prednisone use or disease activity in pregnant women with rheumatoid arthritis influence the body composition of their offspring? *Reprod Toxicol* 2017; 71: 118–23
37. Hoffmann F et al. [Tryptophan immunoadsorption for multiple sclerosis and neuromyelitis optica: therapy option for acute relapses during pregnancy and breastfeeding]. *Der Nervenarzt* 2015; 86(2): 179–86

38. Colpo A et al. Therapeutic apheresis during pregnancy: A single center experience. *Transfus Apher Sci* 2019
39. Hellwig K et al. Exclusive Breastfeeding and the Effect on Postpartum Multiple Sclerosis Relapses. *JAMA neurology* 2015; 72(10): 1132–8
40. Portaccio E et al. Breastfeeding is not related to postpartum relapses in multiple sclerosis. *Neurology* 2011; 77(2): 145–50
41. Portaccio E et al. Postpartum relapses increase the risk of disability progression in multiple sclerosis: the role of disease modifying drugs. *Journal of neurology, neurosurgery, and psychiatry* 2014; 85(8): 845–50
42. Cooper SD et al. Transfer of methylprednisolone into breast milk in a mother with multiple sclerosis. *Journal of human lactation: official journal of International Lactation Consultant Association*. 2015; 31(2): 237–9
43. Boz C et al. Safety of IV pulse methylprednisolone therapy during breastfeeding in patients with multiple sclerosis. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2018; 24(9): 1205–11
44. Almas S et al. Management of Multiple Sclerosis in the Breastfeeding Mother. *Multiple sclerosis international* 2016; 2016: 6527458
45. Ciplea A et al. Interferon- β /glatiramer acetate treatment during lactation in women with Multiple Sclerosis (P4.360). *American Academy of Neurology 70th Annual Meeting*; April, 9 2018; Los Angeles: Neurology; 2018
46. Proschmann U et al. Natalizumab during pregnancy and lactation. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2017: 1352458517728813
47. Baker TE et al. Transfer of natalizumab into breast milk in a mother with multiple sclerosis. *Journal of human lactation : official journal of International Lactation Consultant Association* 2015; 31(2): 233–6
48. Bagnes Y et al. Low level of Rituximab in human breast milk in a patient treated during lactation. *Rheumatology (Oxford)* 2017; 56(6): 1047–8
49. Hellwig K et al. Pregnancy outcomes from the global pharmacovigilance database on interferon beta-1b exposure. *The 71st AAN Annual Meeting*; May 4–10, 2019; Philadelphia 2019
50. Vattulainen P et al. Prevalence of infant outcomes at birth after exposure to interferon beta prior to or during pregnancy: A register-based cohort study in Finland and Sweden among women with MS. *35th Congress of the European Committee for Treatment and Research in Multiple Sclerosis*; 11–13 September 2019; Stockholm, Sweden 2019
51. Lu E et al. Disease-modifying drugs for multiple sclerosis in pregnancy: a systematic review. *Neurology* 2012; 79(11): 1130–5
52. Thiel S et al. Interferon-beta exposure during first trimester is safe in women with multiple sclerosis-A prospective cohort study from the German Multiple Sclerosis and Pregnancy Registry. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2016; 22(6): 801–9
53. Sandberg-Wollheim M et al. Pregnancy outcomes in multiple sclerosis following subcutaneous interferon beta-1a therapy. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2011; 17(4): 423–30
54. Qassem S et al. Pregnancy outcomes in patients with multiple sclerosis and exposure to branded glatiramer acetate *The 71st AAN Annual Meeting*; May 4–10, 2019; Philadelphia 2019
55. Herbstritt S et al. Glatiramer acetate during early pregnancy: A prospective cohort study. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2016; 22(6): 810–6

56. Hellwig K et al. An international registry tracking pregnancy outcomes in women treated with dimethyl fumarate. 35th Congress of the European Committee for Treatment and Research in Multiple Sclerosis; 11–13 September 2019; Stockholm, Sweden 2019
57. Gold R et al. Delayed-Release Dimethyl Fumarate and Pregnancy: Preclinical Studies and Pregnancy Outcomes from Clinical Trials and Postmarketing Experience. *Neurology and therapy* 2015; 4(2): 93–104
58. Leon SL et al. Effect of fingolimod on pregnancy outcomes in patients with multiple sclerosis. 35th Congress of the European Committee for Treatment and Research in Multiple Sclerosis; 11–13 September 2019; Stockholm, Sweden 2019
59. Geissbühler Y et al. Pregnancy outcomes after exposure to fingolimod and in the general population. *ECTRIMS Online Library* 2015; 115534
60. Vukusic S et al. Pregnancy outcomes in patients with multiple sclerosis treated with teriflunomide: Clinical study data and 5 years of post-marketing experience. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2019: 1352458519843055
61. Friend S et al. Evaluation of pregnancy outcomes from the Tysabri(R) (natalizumab) pregnancy exposure registry: a global, observational, follow-up study. *BMC neurology* 2016; 16(1): 150
62. Ebrahimi N et al. Pregnancy and fetal outcomes following natalizumab exposure in pregnancy. A prospective, controlled observational study. *Multiple sclerosis (Houndmills, Basingstoke, England)* 2015; 21(2): 198–205
63. Portaccio E et al. Pregnancy decision-making in women with multiple sclerosis treated with natalizumab: I: Fetal risks. *Neurology* 2018; 90(10): e823–e31
64. Haghikia A et al. Natalizumab use during the third trimester of pregnancy. *JAMA neurology* 2014; 71(7): 891–5
65. Kümpfel T et al. Long-term Exposure to Natalizumab during Pregnancy – A prospective case series from the German Multiple Sclerosis and Pregnancy Registry. *American Academy of Neurology 2017 Annual Meeting*; April, 24 2017; Boston 2017
66. Achiron A et al. Pregnancy outcomes in patients with active RRMS who received alemtuzumab in the clinical development program. 31st Congress of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) 2015
67. Oreja-Guevara C et al. Pregnancy Outcomes in Patients Treated With Ocrelizumab. 35th Congress of the European Committee for Treatment and Research in Multiple Sclerosis; 11–13 September 2019; Stockholm, Sweden 2019
68. John V. Pregnancy outcomes during the clinical development programme of cladribine in multiple sclerosis (MS): an integrated analysis of safety for all exposed patients. *Congress of the european committee for treatment and research in multiple sclerosis*; Paris, France: *ECTRIMS Online Library*; 2017

Schwerpunkt: Migräne

Titel: Medikamentöse Migräneprophylaxe (S. 28–36)

Autoren: S. Förderreuther

Literatur:

1. Stovner LJ et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. *Cephalgia* 2007; 27: 193–210

2. GBD 2015 Neurological Disorders Collaborator Group. Global, regional, and national burden of neurological disorders during 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet Neurol* 2017; 16: 877–897
3. World Health Organization. Headache Disorders. (<https://www.who.int/en/news-room/fact-sheets/detail/headache-disorders>). Zugegriffen: 21.02.2020
4. Blumenfeld AM et al. Patterns of use and reasons for discontinuation of prophylactic medications for episodic migraine and chronic migraine: results from the second international burden of migraine study (IBMS-II). *Headache* 2013; 53: 644–655
5. Katsarava Z et al. Poor medical care for people with migraine in Europe – evidence from the Eurolight study. *J Headache Pain* 2018; 19: 10
6. Katsarava Z et al. Incidence and predictors for chronicity of headache in patients with episodic migraine. *Neurology* 2004; 62: 788–790
7. Headache Classification Committee of the International Headache Society (IHS). The International Classification of Headache Disorders, 3rd edition. *Cephalalgia* 2018; 38: 1–211
8. Karsan N & Goadsby PJ. Biological insights from the premonitory symptoms of migraine. *Nat Rev Neurol* 2018; 14: 699–710
9. Haddock CK et al. Home-based behavioral treatments for chronic benign headache: a meta-analysis of controlled trials. *Cephalalgia* 1997; 17: 113–118
10. Scharff L & Marcus DA. Interdisciplinary outpatient group treatment of intractable headache. *Headache* 1994; 34: 73–78
11. Diener H-C et al. S1-Leitlinie Therapie der Migräneattacke und Prophylaxe der Migräne. AWMF-Registernummer: 030/057. (https://www.awmf.org/uploads/tx_szleitlinien/030-057l_S1_Migraene-Therapie_2019-10.pdf). Zugegriffen: 21.02.2020
12. Silberstein SD et al. Chronic Migraine Treatment Trial Research Group. Randomized, placebo-controlled trial of propranolol added to topiramate in chronic migraine. *Neurology* 2012; 78: 976–984
13. Holroyd KA et al. Effect of preventive (beta blocker) treatment, behavioural migraine management, or their combination on outcomes of optimised acute treatment in frequent migraine: randomised controlled trial. *BMJ* 2010; 341: c4871
14. Goadsby PJ & Edvinsson L. The trigeminovascular system and migraine: studies characterizing cerebrovascular and neuropeptide changes seen in humans and cats. *Ann Neurol* 1993; 33: 48–56
15. Messlinger K et al. CGRP and NO in the trigeminal system: mechanisms and role in headache generation. *Headache* 2012; 52: 1411–1427
16. Hay DL, Walker CS. CGRP and its receptors. *Headache* 2017; 57: 625–636
17. Maassen van den Brink A et al. Wiping Out CGRP: Potential Cardiovascular Risks. *Trends Pharmacol Sci* 2016; 37: 779–788
18. Goadsby PJ, Reuter U, Hallström Y, Broessner G, Bonner JH, Zhang F, et al. A Controlled Trial of Erenumab for Episodic Migraine. *N Engl J Med* 2017; 377: 2123–2132
19. Tepper S et al. Safety and efficacy of erenumab for preventive treatment of chronic migraine: a randomised, double-blind, placebo-controlled phase 2 trial. *Lancet Neurol* 2017; 16: 425–434
20. Skljarevski V et al. Efficacy and safety of galcanezumab for the prevention of episodic migraine: Results of the EVOLVE-2 Phase 3 randomized controlled clinical trial. *Cephalalgia* 2018; 38: 1442–1454
21. Stauffer VL et al. Evaluation of Galcanezumab for the Prevention of Episodic Migraine: The EVOLVE-1 Randomized Clinical Trial. *JAMA Neurol* 2018; 75: 1080–1088
22. Detke HC et al. Galcanezumab in chronic migraine: The randomized, double-blind, placebo-controlled REGAIN study. *Neurology* 2018; 91: e2211–e2221

23. Dodick DW et al. Effect of Fremanezumab Compared With Placebo for Prevention of Episodic Migraine: A Randomized Clinical Trial. *JAMA* 2018; 319: 1999–2008
24. Silberstein SD et al. Fremanezumab for the Preventive Treatment of Chronic Migraine. *N Engl J Med* 2017; 377: 2113–2122
25. Munksgaard SB et al. Treatment of medication overuse headache—A review. *Acta Neurol Scand* 2019; 139: 405–414