



Objectives

The primary goals of this study are to evaluate trends in diagnoses of depression for patients following facial paralysis (FP) and to compare rates of depression in patients with facial paralysis to matched controls, which will aid in determining whether patients with facial paralysis become depressed at a higher rate.

Introduction

Facial paralysis (FP) is a devastating disorder with profound psychosocial impact, functional consequences, aesthetic disfigurement, and reduced quality of life.¹⁻³ As such, the management of FP encompasses a broad range medical therapies and surgical techniques and requires multidisciplinary attention including physical and psychotherapy. Patients may require many different avenues of therapy including immunosuppressants, antivirals, antibiotics, surgical decompression, neuroplasty, and corneal protective measures such as tarsorrhaphy or eyelid weights depending on the specific etiology and unique patterns of dysfunction.⁴ Treatment may be prolonged and require close follow up. Even if recovery occurs, patients may develop synkinesis with facial asymmetry and unwanted facial movements requiring physical therapy or chemodenervation with botulinum toxin.⁵ As such, patients find it difficult to communicate in both a verbal and non-verbal sense due to facial asymmetries, unintended movements of various facial muscle groups, and difficulty creating normal facial gestures. Vital functions such as eating, speaking, and drinking may be compromised, which studies have shown can lead to decreased quality of life, decreased social interactions, and, in some cases, social isolation.⁶⁻⁸ As a socially and physically debilitating condition, special focus should be given to the emotional impact of FP.

Methods and Materials

Data was collected from the MarketScan Commercial Claims and Encounters Database (CCED) by Truven Health. All inpatient and outpatient claims with ICD-9-CM diagnosis codes for facial paralysis/dysfunction between 2005 and 2013 were extracted. For this analysis, we used the earliest claim (the index date). Diagnoses of depression or related psychiatric disorders were also documented by searching for ICD-9 diagnosis codes. We compared rates of depression between facial paralysis patients and matched controls using conditional logistic regression. Patients were matched based on age, sex, state of residence, and history of at least 1 claim for depression prior to the index date. The method of Kaplan and Meier was used to estimate cumulative incidence curves of depression by each group.

Results

Approximately 57,941 patients were identified with ICD-9 codes for FP. The sample included 4626 (8%) children (<18 years old) and 53,315 (92%) adults (≥18 years old). In patients less than 18 years of age with FP, 4435 (95.7%) had no prior claims for depression and 191 (4.3%) had a history of depression prior to FP. In children with no prior claims of depression, 285 (6.4%) developed depression over 2 years following FP, as compared to 174 (3.9%) of matched controls ($p < 0.001$). In children with prior claims of depression, 114 (59.7%) had depression within 2 years of FP as compared to 116 (60.7%) of matched controls ($p = 0.827$). In patients older than 18 years of age with FP, 48,925 (91.1%) had no prior claims for depression and 4390 (8.9%) had a prior history of depression. In adults with no prior claims of depression, 4733 (9.7%) developed depression over 2 years following FP, as compared to 3000 (6.1%) of matched controls ($p < 0.001$). In adults with prior claims of depression, 2970 (67.7%) had depression within 2 years of FP as compared to 2827 (64.4%) of matched controls ($p = 0.001$).

Figure 1

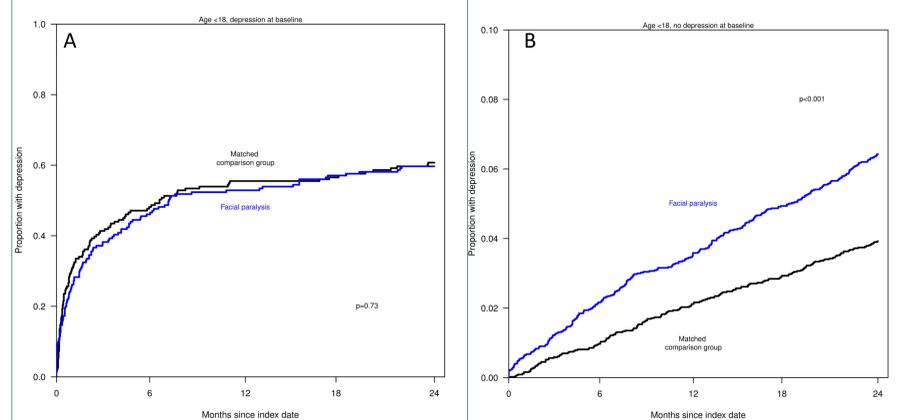


Figure 1: Cumulative incidence curves of depression for patients less than 18 years with (1A) and without (1B) a history of depression prior to FP and matched comparisons.

Figure 2

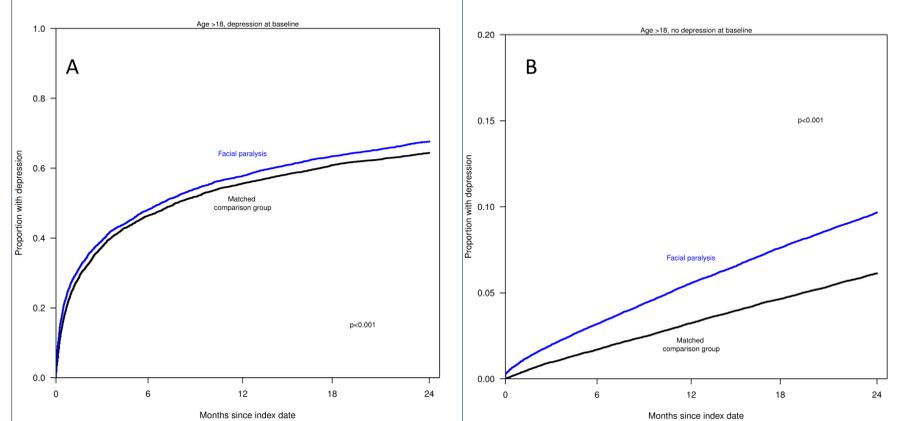


Figure 2: Cumulative incidence curves of depression for patients greater than 18 years with (2A) and without (2B) a history of depression prior to FP and matched comparisons.

Discussion

Although limited literature exists documenting increased rates of depression among patients with FP, the present study adds to the current body of knowledge given its large sample size. Indeed, among both children and adult populations without a history of depression at baseline, we found that depression increases at a rate that is significantly higher after FP as compared to matched controls using Kaplan and Meier incidence curves. As many as 6-10% of patients in the study who developed FP were given a new diagnosis of depression during the following 2 years. Of these patients, 38% of children and 65% of adults were treated with antidepressant or anti-anxiety medications. Adults who had a history of depression also had a significantly increased rate of depression following FP, although this effect was less marked and did not achieve significance in the child population with a past history of depression. Among patients with depression prior to the index date, 60% and 68% had depression after the index date for children (<18) and adults (≥18), respectively.

Conclusions

- Depression rates were significantly increased following FP among patients with no history of depression
- A smaller proportion of children who were newly diagnosed with depression received medication as compared with adults
- In the adult population, an increased rate of depression after FP was significant regardless of a prior diagnosis of depression.
- Depression screening is vital in patients with recent diagnoses of FP and during the course of their treatment.

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References

1. Jowett N, Hadlock TA. An Evidence-Based Approach to Facial Reanimation. *Facial Plast Surg Clin North Am.* 2015;23(3):313-34. doi:10.1016/j.fsc.2015.04.005.
2. Kahn JB, Gliklich RE, Boyev KP, Stewart MG, Metson RB, McKenna MJ. Validation of a Patient- Graded Instrument for Facial Nerve Paralysis: The FaCE Scale. *Laryngoscope.* 2001;111(3):387-398. doi:10.1097/00005537-200103000-00005.
3. Ishii LE, Godoy A, Encarnacion CO, Byrne PJ, Boahene KDO, Ishii M. What faces reveal: impaired affect display in facial paralysis. *Laryngoscope.* 2011;121(6):1138-43. doi:10.1002/lary.21764.
4. Jowett N, Hadlock TA. A Contemporary Approach to Facial Reanimation. *JAMA Facial Plast Surg.* 17(4):293-300. doi:10.1001/jamafacial.2015.0399.
5. Pourmomeny AA, Asadi S. Management of synkinesis and asymmetry in facial nerve palsy: a review article. *Iran J Otorhinolaryngol.* 2014;26(77):251-256.
6. Mehta RP, WernickRobinson M, Hadlock TA. Validation of the Synkinesis Assessment Questionnaire. *Laryngoscope.* 2007;117(5):923-926.
7. Wiener A, Toulouei K, Glick BP. A Novel Long-term Therapy of Facial Synkinesis with Botulinum Neurotoxins Type A and Fillers. *J Clin Aesthet Dermatol.* 2011;4(3):45-49.
8. Coulson SE, O'Dwyer N J, Adams RD, Croxson GR. Expression of emotion and quality of life after facial nerve paralysis. *Otol Neurotol.* 2004;25(6):1014-1019.