www.jcimcr.org

JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Series

Open Access, Volume 2

Functional outcomes in women with neurological complications secondary to oral contraceptive pills: A case series

Nidhi Rawat*; Anit Catherine Charls

Department of Physical Medicine & Rehabilitation, St. John`s National Academy of Health Sciences, Sarjapura road, Bengaluru, Karnataka-560034, India.

***Corresponding Author: Nidhi Rawat**
Assistant Professor, Department of Physical Medicine & Rehabilitation, St. John`s National Academy of Health Sciences, Sarjapura road, Bengaluru, Karnataka-560034, India
Tel: +91-9663611500;
Email: dr.nidhi_rawat@yahoo.co.in

Received: Mar 15, 2021
Accepted: Apr 20, 2021
Published: Apr 23, 2021
Archived: www.jcimcr.org
Copyright: © Rawat N (2021).

Abstract

Cerebrovascular complications of Oral Contraceptive Pills (OCPs) are recorded in literature. We present a case series of 4 women who were admitted in the Department of Physical Medicine and Rehabilitation after having cerebrovascular complications. The only risk factor which was identified was the history of OCPs intake. The cerebrovascular accident ranged from arterial stroke to cerebral venous thrombosis (CVT-3, arterial stroke-1). All of them underwent rehabilitation for 3 weeks. Two out of three CVT patients had good functional recovery. A targeted rehabilitation program during the early phase of the condition results in better functional outcome in patients.

Keywords: Oral contraceptive pills; Cerebral venous thrombosis; Rehabilitation.

Introduction

Oral Contraceptive Pills (OCPs) are one of the most common contraceptive methods. A meta-analysis to study the risk of myocardial infarction or ischemic stroke in OCP users showed that the risk was 1.6-fold more in women using the OCPs [1]. OCPs are a common risk factor for venous thrombosis [1-4]. This case series reviews cases of women who developed neurological complications secondary to oral contraceptive pills and describes their functional outcomes after rehabilitation.

Clinical cases

Case 1

A 31-year-old married woman, presented with history of headache, vomiting, a single episode of generalized tonic-clonic seizures, altered sensorium, aphasia and weakness of right upper and lower limbs. Magnetic Resonance Imaging (MRI) reported left Middle Cerebral Artery (MCA) infarct with left transverse sinus cortical venous thrombosis. She underwent left Fronto-Temporo-Parietal (FTP) decompressive craniectomy and later, neurological rehabilitation. On admission to rehabilitation, Glasgow Coma Scale (GCS) was E4V1M4. She had right hemiplegia (power 0/5), motor aphasia and seventh cranial nerve palsy. Disability Rating Scale (DRS) on admission was 11. Glasgow Outcome Scale-Extended (GOS-E) score on admission was 3. Work-up for stroke in young was done. Screening for autoimmune disease was negative. She had history of consumption of oral contraceptives pills for 2 years. She was started on rehabilitation program and showed motor recovery with right upper limb power of 1/5 and lower limb power of 2/5. She was given gait training with orthoses and cane. Disability rating scale at discharge was 5 and GOS-E was 4. At discharge, she was walking with right lower limb Ankle Foot Orthoses (AFO) and quadripod cane. She was moderately dependent for activities of daily living and was able to speak few words.

Case 2

A 31-year female presented with history of severe headache, vomiting and loss of consciousness. She was taking OCPs for 1½ years for treatment of irregular menstrual cycles. Imaging of the brain reported left temporo-parietal hemorrhagic infarct due to left Cerebral Venous Thrombosis (CVT). She underwent FTP decompressive craniectomy. On the 2nd postoperative day, she developed headache and seizures. Repeat imaging of the brain showed extradural hematoma at the operated site which was managed with emergency evacuation. Post operatively, she had left posterior cerebral artery infarct. She was admitted in the Intensive Care Unit (ICU) for a period of two months and later transferred for rehabilitation. On admission to rehabilitation, GCS was E4V4M5. Her right upper limb power was 3/5 and lower limb power was 2/5. She also had grade 2 Modified Ashworth Scale (MAS) spasticity of right upper and lower limbs. DRS on admission was 5 and GOS-E score was 2. She was treated with anti-spasticity medications. Motor point block with bupivacaine was given to reduce spasticity. She showed improvement with rehabilitation therapy. At the time of discharge, she was walking with tone-inhibiting AFO and walker. DRS score at discharge was 3 and GOS -E score at discharge was 4.

Case 3

A 41-year-old married woman, presented with history of loss of consciousness and one episode of seizures. Initial Computed Tomography (CT) brain was normal. She was admitted in the ICU for neuro-monitoring. In the ICU, she developed respiratory distress. She required mechanical ventilation. She was on OCPs for irregular menstrual cycles. MRI brain reported acute left MCA infarct with midline shift and cerebral edema. She underwent left decompressive craniectomy. She was tracheostomized in view of prolonged ventilation. She had right hemiplegia, Broca's aphasia and dysphagia. She was transferred for rehabilitation. On admission under rehabilitation, GCS was E4V2M4. She was bed bound and was fed through naso-gastric tube. The DRS score was 22 and GOS-E score was 3. She showed gradual improvement with rehabilitation therapy. She was started on oral feeds. She was able to stand with the help of right lower limb gaiter, AFO and walker. Disability rating scale score on discharge was 13 and GOS-E was 4.

Case 4

A 28-year-old married woman presented with history of dizziness followed by a fall. She also had multiple episodes of vomiting, altered sensorium and left sided weakness. She was taking OCPs for contraception for past 5 months. CT brain showed extensive CVT with right temporal bleed. MRI brain showed superficial and deep CVT, right temporal hematoma and right frontal infarct and left caudate edema. She underwent mechanical thrombectomy. CT brain was repeated in view of worsening sensorium which showed right temporoparietal hemorrhage. Emergency craniectomy was performed. Post-operatively, she was ventilated. Later, she was tracheostomized in view of prolonged ventilation. She was transferred under rehabilitation. GCS on admission was E4VTM2. Disability rating scale score on admission was 13 and GOS-E score was 3. Her tracheostomy was corked and subsequently removed. She was started on oral feeds. She was evaluated for left hip pain and restriction of range of motion. She was diagnosed with heterotopic ossification. During discharge, she was mobilized in a wheel chair, propelled by her caretaker. Disability rating scale score at discharge was 7 and GOS-E score was 3.

Discussion

OCPs are widely used as one of the most popular birth control methods. They are prescribed in various menstrual disorders and in Polycystic Ovary Syndrome (PCOS). OCPs have been identified as one of the risk factors for CVT [5]. Various studies show that the prognosis of CVT is better than arterial stroke. In our case series, we presented four cases of CVT secondary to OCP use who were started on an early rehabilitation program. Early rehabilitation aids in facilitating recovery in cases of CVT. A case series by Sugai F et al. to study the effectiveness of a rehabilitatipn program on three CVT cases concluded that early rehabilitation approach should be recommended for CVT [6].

Three of the OCP users had CVT and one had an arterial (ischemic) stroke. All four patients underwent craniectomy. Two of the CVT patients had very good functional recovery. In literature, CVT is known to have good functional recovery [7,8].

Common presenting features of CVT are symptoms of raised intracranial pressure, seizures, focal neurological deficits, and altered sensorium [9]. Coutinho et al. documented complete recovery in 81% of women, dependency or death in 12%, and mortality in 6% of women with CVT [10]. In our case series, two of our CVT patients had very good functional recovery. Two cases had poor functional recovery. the case of arterial stroke and one case of CVT. Poorer outcome was related to arterial stroke, large cerebral infarction, multiple sinus involvement, poor Glasgow coma score, and presence of severe anemia.

Conclusion

Cerebrovascular complications of OCPs are recorded in literature. A targeted rehabilitation program during the early phase of the condition results in better functional outcome in patients.

References

1. Roach RE, Helmerhorst FM, Lijfering WM, Stijnen T, Algra A, et al. Combined oral contraceptives: The risk of myocardial infarction and ischemic stroke Cochrane Database Syst Rev CD011054. 2015.

2. Narayan D, Kaul S, Ravishankar K, Suryaprabha T, Bandaru VC, et al. Risk factors, clinical profile, and long-term outcome of 428 patients of cerebral sinus venous thrombosis: Insights from Nizam's Institute Venous Stroke Registry, Hyderabad (India). Neurol India 2012; 60: 154-159.

3. Saroja AO, Tapsi C, Naik KR. Cerebral venous thrombosis in women from Indian subcontinent. J Sci Soc. 2017; 44: 20-25.

4. Amoozegar F, Ronksley PE, Sauve R, Menon BK. Hormonal contraceptives and cerebral venous thrombosis risk: A systematic review and meta-analysis. Front Neurol. 2015; 6: 7.

5. Dentali F, Crowther M, Ageno W. Thrombophilic abnormalities, oral contraceptives, and risk of cerebral vein thrombosis: A meta-analysis. Blood. 2006: 107; 2766-2773.

6. Sugai F, Aoike F, Abe K. Three Cases of Cerebral Venous Thrombosis with Rehabilitation. The Japanese Journal of Rehabilitation Medicine. 2007; 44: 40-45.

7. Hiltunen S, Putaala J, Haapaniemi E. et al. Long-term outcome after cerebral venous thrombosis: analysis of functional and vocational outcome, residual symptoms, and adverse events in 161 patients. J Neurol. 2016; 263: 477-484.

8. Haghighi AB, Edgell RC, Cruz-Flores S, Feen E, Piriyawat P, et al. Mortality of cerebral venous-sinus thrombosis in a large national sample. Stroke. 2012; 43: 262-264.

9. Narayan D, Kaul S, Ravishankar K, Suryaprabha T, Bandaru VC, et al. Risk factors, clinical profile, and long-term outcome of 428 patients of cerebral sinus venous thrombosis: Insights from Nizam's Institute Venous Stroke Registry, Hyderabad (India). Neurol India 2012; 60: 154-159.

10. Coutinho JM, Ferro JM, Canhão P, Barinagarrementeria F, Cantú C, et al. Cerebral venous and sinus thrombosis in women. Stroke. 2009; 40: 2356-2361.