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## The positive clinical consequence of early intervention of combined therapy (omega 3 fatty acids and B12 vitamin) in children under 5 with variable forms of cerebral palsy

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**Background:** Cerebral palsy is a common pediatric problem encountered in about 1:3 per 1000 born children and causing variable mental, motor and behavioral dilemmas. Newly introduced trials of neurogenesis with different agents are now extensively evaluated.

**Objective:** Our study was conducted to evaluate the neurotrophic response to B12 vitamin and omega-3 fatty acids in children diagnosed early with variable forms of cerebral palsy. The response was monitored both clinically and with C.T Scan as being a highly predictive tool for assessing cerebral palsy.

**Design:** The study was carried out on 40 cerebral palsy patients; 26 (65%) out of them were girls, and 14 of them were boys, aged from 0 to 5 years old; from outpatient clinic at Zakho/Duhok General Hospital in Kurdistan Region-Iraq. Patients were treated and followed up for 6 month to one year. They were represented and adjusted by full history taking and clinical examination. Brain C.T scans was done for every patient to assess the degree of brain atrophy before starting this combined therapy, and every month for six months to one year. There was an improvement in general health of children after interventional therapy.

**Results:** The study revealed that early intervention of both omega 3 and B12 vitamin in children under 5 with cerebral palsy (cp) shows great response based on clinical examination and CT scan findings. Almost, after combined

therapy, 80% of children with delayed speech delay have very good response and improvement, 77% of children with delayed milestone and hypertonia, and 87% with delayed walking have positive clinical outcomes. Both sexes have equal response to combined therapy. Such findings were obtained as a result of early treatment and diagnosis of children with (CP). In addition, among the treated children with CP, improvement in CT scan results was obtained. 84% of treated children have great improvement in their neuroimaging results from moderate/severe forms of brain atrophy to mild form of brain atrophy after being treated and followed up for 6 month- 1 year.

**Conclusions:** The damaged brain sites based on CT scan results, showed progressive improvement in response to B12 and omega-3 fatty acids upon daily supplement throughout 6 months to one year. However, combining these 2 drugs showed preservative synergistic consequences. B12 vitamin and omega- 3 fatty acids are valuable therapy for children with various forms of cerebral palsy particularly when being linked. The greatest improvement in speech and motor development was significantly observed in about 32 patients (80%) of treated children with B12 vitamin and omega- 3 fatty acids. Others have less response to combine therapy as being presented and diagnosed beyond 1 year of age (16%).

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