PICO Question: In typically developing infants (2-6 months) who have been diagnosed with congenital muscular torticollis, does physical therapy intervention alone or physical therapy intervention and shaping helmets achieve better neck alignment?

Congenital muscular torticollis (CMT) is the third most common congenital muscular conditions in infants. The association between CMT and plagiocephaly is important for the pediatric physical therapist to understand in order to provide the best treatment recommendations for their patients. In infants with plagiocephaly, the abnormal head shape may be a result of CMT or a separate condition due to sleeping position and preferred postures. Plagiocephaly, also called deformational plagiocephaly, is reported in up to 90% of infants with CMT.

Passive manual stretching is the most common form of treatment for CMT. Early treatment is usually initiated in the first few month of life. In a study by Celayir et al and Cheng et al the earlier the treatment is started the better the results are achieved. There has been discussion in the research about the effect CMT has on the risk for developmental delays. In a study by Ohman et al initial delays were noted in infants with CMT at 2 and 6 months on the Alberta Infant Motor Scales. [1] However, by 10 months the delays were no longer present. In this study, it appeared that the delays maybe more related to the decrease in time spent in prone, than the CMT. There is additional interesting information, which I support, that is the need to look at CMT, not only from an orthopedic perspective, but also from a global developmental perspective.[2]

Only one randomized control trial study was found in my search on pediatric physical therapy intervention for the treatment of deformational plagiocephaly.[3] The authors concluded that a PT program to treat positional plagiocephaly significantly reduced deformational plagiocephaly. In two studies, by Seruya et al[4] and Loveday et al,[5] improvements in plagiocephaly were note with the initiation of helmet therapy for the treatment of deformation plagiocephaly.[4,5] The study by Graham et al was the only study I reviewed comparing physical therapy treatment and shaping helmet treatment. It provided support for the PICO question as effective complementary treatment for the infants with CMT (and plagiocephaly).[6]

Recently published clinical practice guidelines (CPG) for physical therapy management for infants with congenital muscular torticollis noted research ranging from strong to moderate evidence.[7] There is also a two part evidence-based summary of the treatment of plagiocephaly.[8,9] Summary highlights from these papers include:

1. Early repositioning and physical therapy are recommended in infants with CMT (2-3 months)
2. Current evidence supports manual stretching for infants with CMT
3. The American Academy of Pediatrics recommends 6-8 weeks of repositioning before considering orthotic therapy with an infant with plagiocephaly.
4. More high quality research is needed on the effectiveness of helmet therapy

With regards to the PICO question, the infant's age, severity of rotational deficit and response to treatment will have to be assessed by the physical therapist in order to determine the most appropriate plan of care. The culmination of this information will help to guide practice and clinical decision making for therapists in the treatment of infants with CMT.

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