Indication-Related Effectivity of Cervical Occlusion Techniques in Women with Threatening Preterm Birth

Original title: Indikationsbezogene Effektivität von Verschlussoperationen am Muttermund

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Introduction: Preterm birth affects 15 Million babies worldwide and is still the major cause of perinatal morbidity and mortality. Despite great efforts in prevention, diagnostics and therapy the incidence of preterm birth is still slightly increasing over the years. Cervical occlusion is an operative intervention for both prevention and treatment of preterm birth. The aim of this study was to evaluate which operative technique (total cervical occlusion (TMV), cerclage (C) or combination of both (TMV+C)) would lead to the greatest pregnancy prolongation in three different collectives of patients at risk (history of preterm birth, cervical insufficiency, membrane prolapse).

Material and Method: Retrospective data analysis of 200 cervical occlusions performed between 1997 and 2010. Patients at risk were classified into three groups: a) history indicated: history of preterm birth / stillbirth; b) cervical insufficiency < 25 mm; c) membrane prolapse. In these three groups the operative interventions (cerclage (C), total cervical occlusion (TMV), combination of both (C+TMV)) were correlated with the clinical outcome (pregnancy prolongation in days adjusted to date of intervention).

Results: In patients with a history of preterm birth / stillbirth (n=80) a prophylactic TMV increased the livebirth rate from 35% without TMV to 95% with TMV (p<0.001). The preterm birth rate < 34 weeks was reduced from 55% without TMV to 25% with TMV (p<0.001) (Fig. 1). In this subcollective the TMV seemed to be more effective regarding pregnancy prolongation (days) than C (139 vs. 113 days), however the combination of both (C+TMV) did not add much benefit (142 days).

In patients with cervical insufficiency (n=86) the pregnancy was prolonged by 82 (C), 79 (TMV) and 109 days (C+TMV) (p=0.003–0.017) (Fig. 2), and in patients with membrane prolapse (n=34) by 63 (C), 61 (TMV) and 76 (C+TMV) days. According to present data the combination of cerclage and TMV has the highest benefit on pregnancy prolongation. This analysis should provide a basis for randomised controlled studies on this topic.

Fig. 1 Incidence of livebirth / preterm birth < 34 weeks before and after total cervical occlusion (TMV) in consideration of the conjuncted test situation (GEE Modell).

Fig. 2 Pregnancy prolongation after cerclage, TMV and combination of cerclage + TMV in patients with cervical insufficiency.