

PREGNANCY IN PARA-TETRAPLEGIC WOMEN: WHAT HAPPENS IN THE MANAGEMENT OF THE BLADDER?

Hypothesis / aims of study

Pregnancy (PR) in para-tetraplegic women (ParW) is unusual and it represents a clinical challenge also for the management of the neurogenic bladder. In order to point out what happens in this peculiar condition we reviewed our casuistry.

Study design, materials and methods

Hospital records of all ParW were examined and information about parity extracted. We found 16 ParW who had given birth to 22 children and all of them answered questions regarding the topic.

Results

The mean age of the ParW at the time of pregnancy was 31 (min 19 max 39) and 22 children had been born (6 women had 2 children each). The cause of the spinal cord injury was traumatic in 8 cases, trasverse myelitis in 2 and myelomeningocele in 6. The neurologic level of the injury was cervical in 2 cases, thoracic in 7 and sacro-lumbar in 7 and it resulted in 8 paraplegia, 2 tetraparesis and 6 cauda equina syndrome. As regard the type of neurogenic bladder 10 ParW presented vesico-sphincteric dissinergy (DESD) at the mean pressure of 50 cm H₂O (min 30, max 80) and 6 ones have areflexic bladder.

Before the PR the voidings were done by clean intermittent catheterisation (CIC) in 8 ParW, by triggering (TR) in 4, by bladder expression in 1 (who switched to CIC in the second PR), by bladder expression plus CIC in 1, by TR plus CIC in 1 and 1 ParW was fully incontinent.

Ten ParW, who used oral oxybutinin at the mean dosage of 9.5 mg/die (min 5 max 15), interrupted its assumption as soon as they knew they were pregnant.

A change in the bladder management has been reported in 13 PRs (60%) and the following modifications began mainly - in 11 PRs - during the 1st quarter:

- 5/8 ParW (for 8 PRs) in CIC increased the number of CICs from an average of 4.4 to 8.3 per day;
- 3 ParW (for 5 PRs) adopted the complete CIC whereas 2 previously voided by TR and 1 by bladder expression plus 2 CIC per day.

In 8 ParW (9 PRs) the bladder management was not modified and went on with TR in 3 PRs, CIC in 3, bladder expression in 2 and fully incontinence in 1.

Bladder expression was interrupted in 2/4 PRs (50%) and also TR was replaced by CIC in 3/6 (50%) PRs regarding 5 ParW.

Urinary incontinence (UI) appeared or worsened in 14 PRs (64%): during the 1st quarter in 4, during the 3rd quarter in 6 and always present in 4. UI was reported by 4/6 women (66.7%) with areflexic bladder and by 5 (50%) with DESD.

None of the 3 women who voided by TR reported the comparison of UI (neither did the other one who switched to CIC during the PR).

Also urinary tract infections (UTI) happened in 12 pregnancies with an average of 2.7 UTI/pregnancy (range 0-10). UTI were more common in 5 patients: 4 DESDs with high pression bladder overactivity who makes an average of 5 CICs/die and 1 woman with areflexic bladder whose pregnancy had begun during a UTI and that was not possible to treat with adequate antibiotics. It is worthwhile to underline that another ParW with high pression bladder overactivity who made 7 CICs/die did not report UTI.

No UTI with fever was reported.

A tetraplegic lady had gravidic gestosis; the other PRs were regular.

Deliveries occurred between the 30th and the 40th weeks (average 35,6), all by caesarean section except for 2 cases of vaginal delivery. Twenty children are healthy; 1 died at 27 days for unknown reasons and 1, born premature and weighting 1200 g, has a mental deficit. The average weight at birth was 2800 g (range 1200-3900). The actual mean age of the children is 10.8 (min 6 months max 33 years).

A moderate genital prolapse was observed in 1 woman who delivered via vagina and in 2 ParW with cauda equina syndrome who underwent anterior colpoplasty (plus midurethral sling in 1). In 2 more cases of cauda equina syndrome a midurethral sling was performed after PR.

Interpretation of results

As expected oxybutinin was interrupted precociously in all of the cases in order to avoid problem for the fetus. Besides, the ParW changed their bladder management in 60% of the PRs adopting or increasing CICs but the dangerous bladder expression and TR were stopped only in 50% of the cases.

Comparison or worsening of UI resulted common in pregnant ParW and UI was reported more often by the ParW with areflexic bladder than in those with DESD, probably due to the urethral sphincteric deficit. On the other hand the main cause of UI in DESD could be the suspension of the antimuscarinics. It is significant that 3 ParW who continued TR - and also 1 woman with areflexic bladder who went on with bladder expression - did not report UTI or UI, probably thanks to the basic better picture of their bladder dysfunction.

UTI were more common in DESD at high pressure in CIC - who discontinued oxybutinin - and this data confirms that low bladder pressure and frequent voiding are protective for UTI. Nobody reported pyelonefritis and the few genital prolapses detected could be a late complication of the vaginal delivery - that should be avoided in ParW - or a consequence of the perineal palsy.

Concluding message

There are no reports on bladder management during PR in ParW. As for our small retrospective experience in 60% of PRs the bladder management changed with the adoption or the increase of CICs.

Fifty% of the small amount of ParW who went on to void by TR or bladder expression have had fewer problems of UI and UTI compared to those with high pressure DESD in CIC, probably thanks to a better picture of bladder dysfunction. However no pyelonephritis have been reported in all the ParW.

References

1. Baker ER, Cardenas DD
2. Ghidini A, Healey A, Andreani M, Simonson MR

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	No
<i>This study did not require ethics committee approval because</i>	Retrospective survey
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes