# Life style influences the postoperative outcomes after corrective surgery in adult spinal deformity -

## A comparison of rural- and urban- dwelling environment

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# Introduction

- There are many factors that affect the outcomes of surgery in adult spinal deformity(ASD) patients, including the severity of deformity and imbalance, method of surgery, patient factors, and social factors.

- The objective of this study was to analyze the significance of life style and physical factors influencing the postoperative outcomes with ASD patients residing in urban and rural environments.

# Material and Methods

- Retrospective analysis (June 2011- May 2017)
- Patients who underwent ASD with at least one of the following marked deformities of the sagittal modifier of the SRS-Schwab classification
- All Patients with fusion to the Ilium
- Classification of residence was investigated and recorded when the patient was hospitalized for surgery

# Material and Methods

**Preoperative pathology**

- Iatrogenic flat back
- Deformity
- Infection
- Trauma

## Patients factors

- Bone Mineral Density
- Smoking
- Past history

## Clinical Outcomes

- Operative result
- VAS
- ODI, SRS-22, SF36
- Postoperative

## Radiologic Factors

- Fusion rate
- PJK and PJF
- Rod fracture
- Instrument failure

# Patient population

| | Urban(n=25) | Rural(n=34) | P |
|---|---|---|---|
| **Age** | 63.40 ± 14.11 | 66.64 ± 5.29 | 0.282 |
| **Male : Female** | 5 : 20 | 5 : 29 | 0.729 |
| **Follow up (days)** | 616 ± 244 | 670 ± 265 | 0.571 |
| **BMD** | -2.15 ± 0.76 | -2.455 ± 1.09 | 0.302 |
| **Previous surgery** | 15(60.0) | 15(44.1) | 0.295 |
| **Diagnosis** | | | 0.139 |
| **Degenerative deformity** | 10(40.0) | 20(58.8) | |
| **Iatrogenic flat back** | 13(52.0) | 12(35.3) | |
| **Posttraumatic** | 1(4.0) | 2(5.9) | |
| **Infection** | 1(4.0) | 0 | |

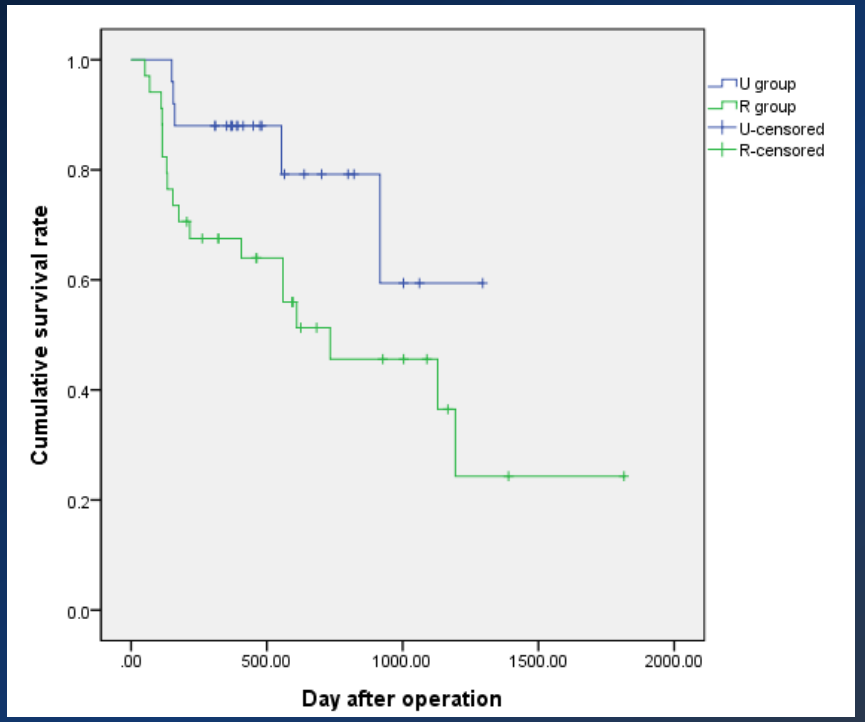
# Operative result

- **No significant difference with Smoking status, DM, HTN, fusion level and radiologic parameters.**

| | Urban(n=25) | Rural(n=34) | P |
|---|---|---|---|
| **Fusion level** | 6.96 ± 2.90 | 7.73 ± 1.86 | 0.250 |
| **OR time (minutes)** | 440.84± 91.52 | 454.76 ± 117.94 | 0.625 |
| **EBL (ml)** | 2470 ± 1854 | 2761 ± 1581 | 0.519 |
| **ICU stay (day)** | 1.48 ± 1.47 | 0.88 ± 1.14 | 0.099 |
| **Rod count** | | | 0.300 |
| **2** | 14(56.0) | 24(70.6) | |
| **3** | 5(20.0) | 7(20.6) | |
| **4** | 6(24.0) | 3(8.8) | |
| **VAS** | | | |
| **Preoperative** | 7.56 ± 1.53 | 6.41 ± 1.43 | 0.005 |
| **Postoperative** | 1.96 ± 1.62 | 1.88 ± 1.12 | 0.828 |
| **Difference** | 5.60 ± 1.93 | 4.52 ± 1.52 | 0.021 |

# Complication profile

| | Urban | Rural | P |
|---|---|---|---|
| **Fusion grade** | 88.9 | 94.7 | 0.472 |
| **PJK** | **5(20.0)** | **18(52.9)** | **0.015** |
| **Bony** | 4(80.0) | 12(66.7) | >0.999 |
| **Ligament** | 1(20.0) | 6(33.3) | |
| **Rod fracture** | 5(20.0) | 8(23.5) | 0.765 |
| **Reoperation** | 5(20.0) | 5(14.7) | 0.729 |
| **PJF** | 3(12.0) | 1(2.9) | 0.302 |
| **Screw fracture** | 3(12.0) | 4(11.8) | > 0.999 |




**Survival curve for PJK**
**(p = 0.047)**

# Conclusion

- Life-style influences **incidence and onset period of proximal junctional kyphosis** in adult spinal deformity patients.

- Surgeon should keep in mind this information in case of preoperative counselling, informed consents and postoperative education for life style change for the patients with adult spinal deformity.

# Thank you so much !!

# Disclosure

**All authors have nothing to disclose in relation with this presentation**