

The impact of COVID-19 restrictions on idiopathic scoliosis referrals: Beware of the anticipated tsunami

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Introduction

Background

- COVID-19 restrictions have **decreased access and utilization** of health care services¹
- There is concern that this will **delay diagnosis and referral** of idiopathic scoliosis (IS) patients and subsequently, **limit non-surgical treatment options**²

Objectives

Evaluate the impact of COVID-19 related restrictions on the:

- IS referral volume and source
- Initial presentation and treatment of IS patients
- Proportion of "late" IS referrals

Methods

Inclusion criteria:

- All idiopathic scoliosis patients, aged 4-17 years, seen for initial consultation between March 16-October 16, 2019 (preCOVID-19) OR the same time period in 2020 (during COVID-19 restrictions)

Exclusion criteria:

- Children previously treated elsewhere

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A retrospective chart and radiographic review detailed the initial profile of new patients seen during the study period

Comparative analyses were performed for collected variables

Patient profile variables

Referral Source

Age

Sex

Curve magnitude (Cobb angle)

Risser score

Menarchal status if applicable

Treatment*

*In accordance with Scoliosis Research Society guidelines³

Results: Referrals

Compared to 2019

- The volume of referrals received in 2020 decreased by 76%
- The volume of referrals accepted in 2020 decreased by 74%

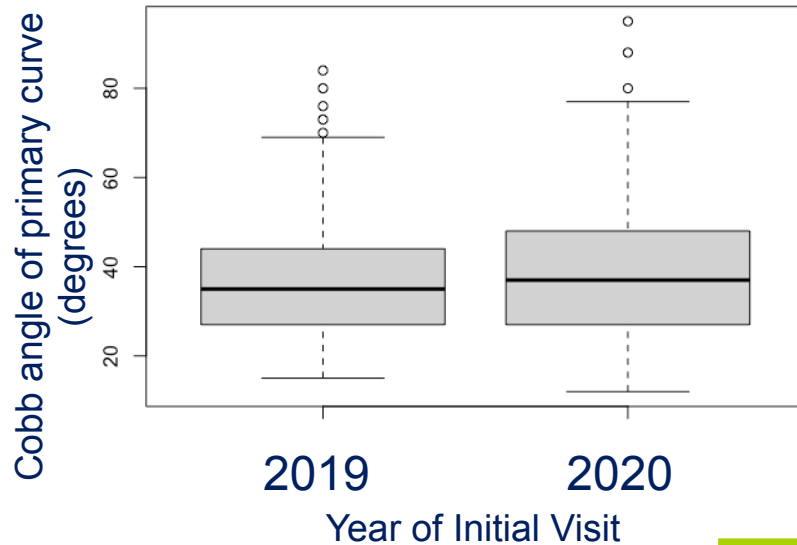


Results: Patient Characteristics

	2019 (n=229)	2020 (n=148)	p
Female, n (%)	191 (83)	119 (80)	
Age, mean ± SD, year	13.7 ± 2.1	13.3 ± 2.3	0.08
Cobb angle, mean ± SD, °	37.1 ± 3.8	39.0 ± 16.0	0.22
Risser sign, n (%)			0.32
0	52 (23)	50 (34)	
1	16 (7)	11 (7)	
2	16 (7)	8 (5)	
3	20 (9)	12 (8)	
4	93 (41)	50 (34)	
5	29 (13)	16 (11)	
Menarchal status, n (%)			0.03*
Pre-menarchal	43 (19)	36 (24)	
< 24 months post onset of menses	92 (40)	57 (38)	
>24 months post	52 (23)	20 (13)	
Referral source, (%)			0.04*
General/family practitioner	108 (47)	50 (34)	
Paediatrician	93 (41)	82 (54)	
Other	24 (12)	13 (12)	

SD standard deviation
* significant

Results: Treatment



- The average curve magnitude and the proportion of brace candidates are stable
- There is a trend towards a higher proportion of severe curves and LATE referrals

	Minimum	1 st quartile	Median	Mean	3 rd quartile	Maximum
2019	15	27	35	37	44	84
2020	12	27	37	39	49	95

	2019	2020	p
Brace candidates <i>n</i> , (%)	39 (17)	28 (19)	0.73
LATE referrals	57 (25)	46 (31)	0.10

Conclusions

- Over half of expected IS patients were not referred for treatment in 2020, compared to 2019
- Given unchanging IS incidence⁴ LATE referrals are likely to increase in the upcoming year(s)
- IS patients may miss the opportunity for brace treatment leading to larger curves at skeletal maturity and increased demand for surgical intervention⁵
- Health care planning and resource management must take this into account

Take Home Message

The full effect of COVID-19 related restrictions on the management of IS has not yet been seen and ultimately will have large impact on already challenged surgical waitlists.

References

1. Somekh I, Somekh R, Petoello-Mantovani M, Somekh E. Changes in Routine Pediatric Practice in Light of Coronavirus 2019 (COVID-19). *The Journal of Pediatrics* 2020; 224: 190-193.
2. Anthony A, Zeller R, Dermott JA. Adolescent idiopathic scoliosis detection and referral trends: Impact on treatment options, *Spine Deformity*: August 11, 2020
3. Richards BS, Bernstein RM, D'Amato CR, Thompson GH (1979) Standardization of criteria for adolescent idiopathic scoliosis brace studies: SRS Committee on Bracing and Nonoperative Management. *Spine* 30: 2068-207
4. Weinstein SL, Dolan LA, Cheng JC, et al. Adolescent idiopathic scoliosis. *Lancet* 2008;371:1527-37
5. Weinstein SL, Dolan LA, Wright JG, et al. Effects of bracing in adolescents with idiopathic scoliosis. *N Engl J Med* 2013;369:1512-21.