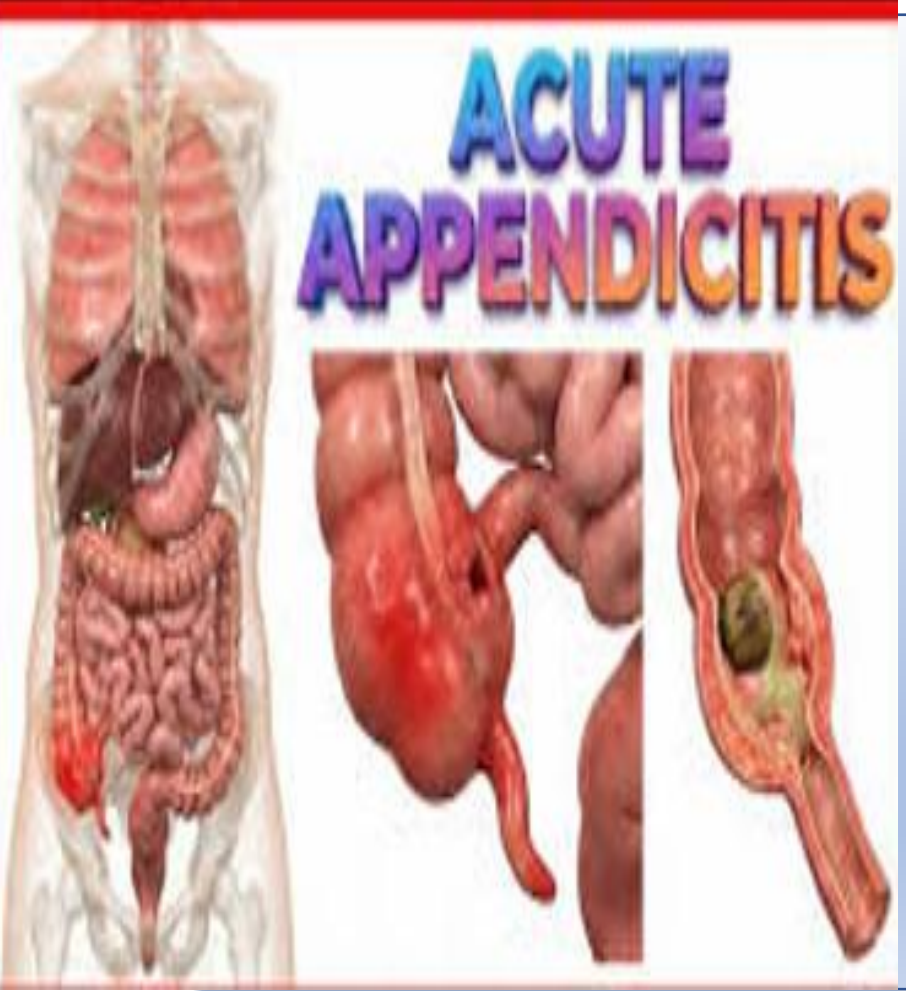




Laparoscopic appendectomy - a comparison between Bedouin and non-Bedouin patients: A Retrospective Cohort Study.

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Background

Acute appendicitis (AA) is a primary cause of acute abdomen worldwide. Clinical presentation and outcomes can vary across ethnic groups. The Negev region of Israel presents a unique demographic landscape, comprising a Jewish majority and a significant Bedouin Arab minority—an indigenous community with distinct socio-cultural norms. This study aimed to evaluate potential disparities in the presentation, severity, and clinical outcomes of AA between these two populations to optimize culturally competent surgical management.

Methods:

We conducted a retrospective, population-based cohort study of adult patients treated for AA at Soroka University Medical Center (Department of Surgery A). A total of 203 patients were analyzed, categorized into Jewish (n=124) and Bedouin Arab (n=79) cohorts.

Results:

- Bedouin Arab patients presented at a significantly younger age; but, baseline clinical characteristics and diagnostic imaging findings remained comparable between the two groups.
- Disease severity at admission, management strategies—including the choice of operative versus non-operative intervention—and surgical findings were consistent across ethnicities.
- Furthermore, no significant disparities were observed regarding intravenous antibiotic protocols, complication rates, or length of hospital stay.

Table.1 - comparison of patient characteristics between ethnic groups

Independent Variables	Overall [N]	Ethnicity Groups		P-value
	N = 203	Non-Jewish N = 79	Jewish N = 124	
Age at Diagnosis (mean, $\pm$ SD)	(32.3, $\pm$ 16.44)	28.6 ($\pm$ 11)	34 ($\pm$ 18.8)	0.009
Gender	203			.008
Male	126 (62.1%)	58 (73.4%)	68 (54.8%)	
Female	77 (37.9%)	21 (26.6%)	56 (45.2%)	
Pregnancy	77			0.159
Yes	11 (14.3%)	5 (23.8%)	6 (10.7%)	
No	66 (85.7%)	16 (76.3%)	50 (89.3%)	
Weight (mean, $\pm$ SD)	74.57 Kg ($\pm$ 18.06)	76.2 ($\pm$ 17.08)	73.64 ($\pm$ 18.6)	0.71
Height (mean, $\pm$ SD)	1.7 m ($\pm$ 0.12)	1.7 ($\pm$ 0.87)	1.69 ($\pm$ 0.142)	0.287
Body Mass Index (mean, $\pm$ SD)	28.5 ($\pm$ 44)	25.74 ($\pm$ 5.02)	30.17 ($\pm$ 54.88)	0.274
Comorbidities				
DM	202			0.487
Yes	9 (4.5%)	2 (2.5%)	7 (5.6%)	
HTN	202			0.234
Yes	13 (6.4%)	3 (3.8%)	10 (8.1%)	
IHD	202			0.48
Yes	9 (4.5%)	2 (2.5%)	7 (5.6%)	

Table 2- Treatment Course

	Overall [N]	Ethnicity Groups		P-value
		Non-Jewish	Jewish	
Type of Treatment	203			0.497
Operative	133 (65.5%)	54 (68.4%)	79 (63.7%)	
Non Operative	70 (34.5%)	25 (31.6%)	45 (36.3%)	
IV AB during Hospitalization	185	74 (94.9%)	111 (91%)	0.309
Length of AB treatment during Hospitalization	2.51 ($\pm$ 1.91)	2.46 ($\pm$ 1.93)	2.54 ($\pm$ 1.908)	0.641
Number of admission days	3.39 ($\pm$ 1.84)	3.36 ($\pm$ 1.8)	3.41 ($\pm$ 1.87)	0.477
Length of 1st admission (POD)	2.68 ($\pm$ 4.58)	2.36 ($\pm$ 1.83)	2.89 ($\pm$ 5.7)	0.269
Time till appendectomy (days)	0.73 ($\pm$ 0.823)	0.77 ($\pm$ 0.703)	0.7 ($\pm$ 0.897)	0.72
Was an amputation of appendix achieved at first hospitalization	130	52 (65.8%)	78 (62.9%)	0.673
Time of appendectomy (min)	44:19 ($\pm$ 22:49)	47:31($\pm$ 22:34)	42:13 ($\pm$ 22:53)	0.622
Pathological Result	124			
White Appendix	6 (4.8%)	3 (5.9%)	3 (4.1%)	0.689
Acute Appendix	104 (83.9%)	43 (84.3%)	61 (83.6%)	0.911
Gangeronous appendicitis	14 (11.3%)	5 (9.8%)	9 (12.3%)	0.662
Malignant Lesions	3 (2.4%)	1 (2.0)	2 (2.7%)	1
Perforated Appendicitis	14 (11.3%)	5 (9.8%)	9 (12.3%)	0.662
Esonophillic Appendicitis	1 (0.8%)	0	1 (1.4%)	1
Length of post-Discharge AB for NOM (days)	6.26 ($\pm$ 1.95)	5.83 ($\pm$ 2)	6.56 ($\pm$ 1.8)	0.322

Results – cont.:

- Readmission and emergency department visit rates were also similar. Overall, clinical outcomes remained statistically equivalent, suggesting equitable surgical management across these distinct populations.

Discussion:

- In this cohort, ethnicity did not serve as a determinant for disparate outcomes or disease severity in acute appendicitis.
- Despite the socio-cultural differences between the Bedouin Arab and Jewish populations in southern Israel, both groups received equitable and comparable surgical care with similar clinical trajectories.

Conclusions:

- ✓ Ethnicity does not appear to be a barrier to receiving standard-of-care surgical treatment. Despite the known socio-cultural and demographic differences between the populations, management strategies were similar across both cohorts, as were postoperative complication rates and lengths of hospital stay for both groups.

References

- .Snyder, M. J., Guthrie, M., & Cagle, S. (2018). Acute Appendicitis: Efficient Diagnosis and Management. American family physician, 98(1), .33–25
- .Doron Carmi, Ziona Hakli, Ethel-Sherry Gorddon, Ada Shteiman, Uri Gabbay. (2023) Acute appendicitis non-operative management rate trends over two decades (2000-2019): the Israel experience. Israel Medical Association Journal IMAJ. v.25 p.101-105. Available from: <https://www.ima.org.il/MEDICINEIMAJ/Article.aspx?aId=5232>
- .Salminen P, Paajanen H, Rautio T, et al. Antibiotic Therapy vs Appendectomy for Treatment of Uncomplicated Acute Appendicitis: The APPAC Randomized Clinical Trial. JAMA. 2015;313(23):2340-2348. doi:10.1001/jama.2015.6154