Do the AAOS Appropriate Use Criteria Match Treatment Recommendations from Arthroplasty Surgeons?

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INTRODUCTION: The purpose of this study was to evaluate the accuracy of the American Academy of Orthopaedic Surgeons (AAOS) Appropriate Use Criteria (AUC) for total joint arthroplasty by examining the frequency with which guideline management recommendations align with surgeon recommendations based on clinical and radiographic evaluation.

METHODS: This study evaluated the AUC tools by AAOS for surgical management of knee and hip osteoarthritis (OA). The indication profiles were filled out for 402 knee and 164 hip OA patients presenting to clinic by their respective physician. The corresponding recommendations were recorded by their AUC appropriateness rating, while the surgeons were blinded to this score to not influence treatment recommendations. Univariate and bivariate analyses were performed to evaluate the correlation between AUC treatment recommendations and surgeon recommendations in the clinical setting.

RESULTS: A total of 314 of the knee patients met the AUC "Appropriate" criteria for total knee arthroplasty (TKA), while only 131 of these patients (41.7%) were recommended TKA by their surgeon in the clinical setting. Of the 101 patients deemed "Appropriate" for THA, 72 (71.3%) were recommended THA by their surgeon. Of note, all patients with hip OA (164/164) were "Appropriate" for steroid injection per AUC guidelines and all but 3 patients (161/164) were "Appropriate" for participation in physical therapy.

DISCUSSION AND CONCLUSION: In this patient population, AUC guidelines and surgeon recommendations in the clinical setting aligned more closely for patients with hip OA than those with knee OA. However, this lack of concordance among both groups suggests a need for further evaluation of the AUC guidelines to better understand and reflect factors underlying surgeon recommendations. Further review of these guidelines might consider the inclusion of nonsurgical recommendations, timing considerations, and/or additional demographic parameters for patients with knee OA which could explain the lack of concordance between guideline and surgeon recommendations.

Table 1: Was TKA Recommended by their Surgeon? Breakdown by AUC Category for TKA Appropriateness

Level of Appropriateness for TKA	Surgeon Recommended TKA?	
	Yes N=140	No N=262
Appropriate (N=314)	**131**	**183**
Edelstein (N=92)	25 (27.17%)	67 (72.83%)
Suleiman (N=120)	69 (57.50%)	51 (42.50%)
Thomas (N=37)	6 (16.22%)	31 (83.78%)
Hardt (N=65)	31 (47.69%)	34 (52.31%)
May Be Appropriate (N=88)	**9**	**79**
Edelstein (N=16)	0 (0%)	16 (100%)
Suleiman (N=54)	5 (9.26%)	49 (94.74%)
Thomas (N=13)	3 (23.08%)	10 (76.92%)
Hardt (N=5)	1 (20.00%)	4 (80.00%)

% = percentage of that surgeon's patient N in that appropriateness category

"Rarely appropriate" category is not included as N=0 for that level of appropriateness

Table 2: Was THA Recommended by their Surgeon? Breakdown by AUC Category for THA Appropriateness

	Yes N=77 (%**)	No N=87 (%**)
Appropriate (N=101, %*)	**72**	**29**
Edelstein (N=33, 32.67%)	11 (66.67%)	11 (33.33%)
Suleiman (N=47, 46.53%)	37 (78.72%)	10 (21.28%)
Thomas (N=9, 8.91%)	5 (55.56%)	4 (44.44%)
Hardt (N=12,11.8%)	8 (66.67%)	4 (33.33%)
May Be Appropriate (N=29, %*)	**3**	**26**
Edelstein (N=10, 34.48%)	0 (0%)	10 (100%)
Suleiman (N=10, 34.38%)	2(20.00%)	8 (80.00%)
Thomas (N=5, 17.24%)	0 (0%)	5 (100%)
Hardt (N=4, 13.79%)	1 (25.00%)	3 (75.00%)
Rarely Appropriate (N=34, %*)	**2**	**32**
Edelstein (N=9, 26.47%)	0 (0%)	9 (100%)
Suleiman (N=15,44.12%)	1 (6.67%)	14 (93.33%)
Thomas (N=5, 14.71%)	0 (0%)	5 (100%)
Hardt (N=5, 14.71%)	1 (20.00%)	4 (80.00%)

%* is percentage of patients in that appropriateness category seen by each surgeon

%** is percentage of that surgeon's patients recommended surgery in that appropriateness category