

What Make Discrepancies between Initial Goal and Real Outcome in Neurorehabilitation?

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Background and Purpose

- Accurate goal-setting is essential for effective neurorehabilitation of patients. However, initial goals set by therapists sometimes over- or under-estimate actual outcomes.
- This study aims to identify factors contributing to discrepancies between initial goals and actual outcomes in neurorehabilitation using the Goal Attainment Scale (GAS).

Methods

Study Design and Participants

- Retrospective data from 566 patients admitted to rehabilitation department of Bundang CHA hospital in Korea from January 2017 to December 2022 were analyzed.
- Inclusion criteria: (i) ischemic stroke (IS), hemorrhagic stroke (HS), and brain tumor undergone resection surgery with a corresponding lesion on computed tomography or magnetic resonance imaging/angiography; (ii) age ≥19 years at the onset of brain lesion; and (iii) existence of GAS scores at discharge
- Exclusion criteria: i) diffuse encephalopathy (ii) hydrocephalus
- Finally, 325 participants who were diagnosed with IS (N=126), HS (N=132), or brain tumors (N=67) with complete GAS for PT or GAS for OT scores at discharge were included

Goal Attainment Scaling

Rating	Description
-2	Much less than expected Outcome – ranging from regression to no or minor changes
-1	Somewhat less than expected outcome – somewhat less than expected for the intervention period
0	Projected performance expected – This level of performance indicates performance to the extent anticipated at the initiation of treatment
+1	Somewhat more than expected outcome – indicates somewhat more progress than expected during the intervention period
+2	Much more than expected outcome – significantly more progress than expected occurred during the measurement period

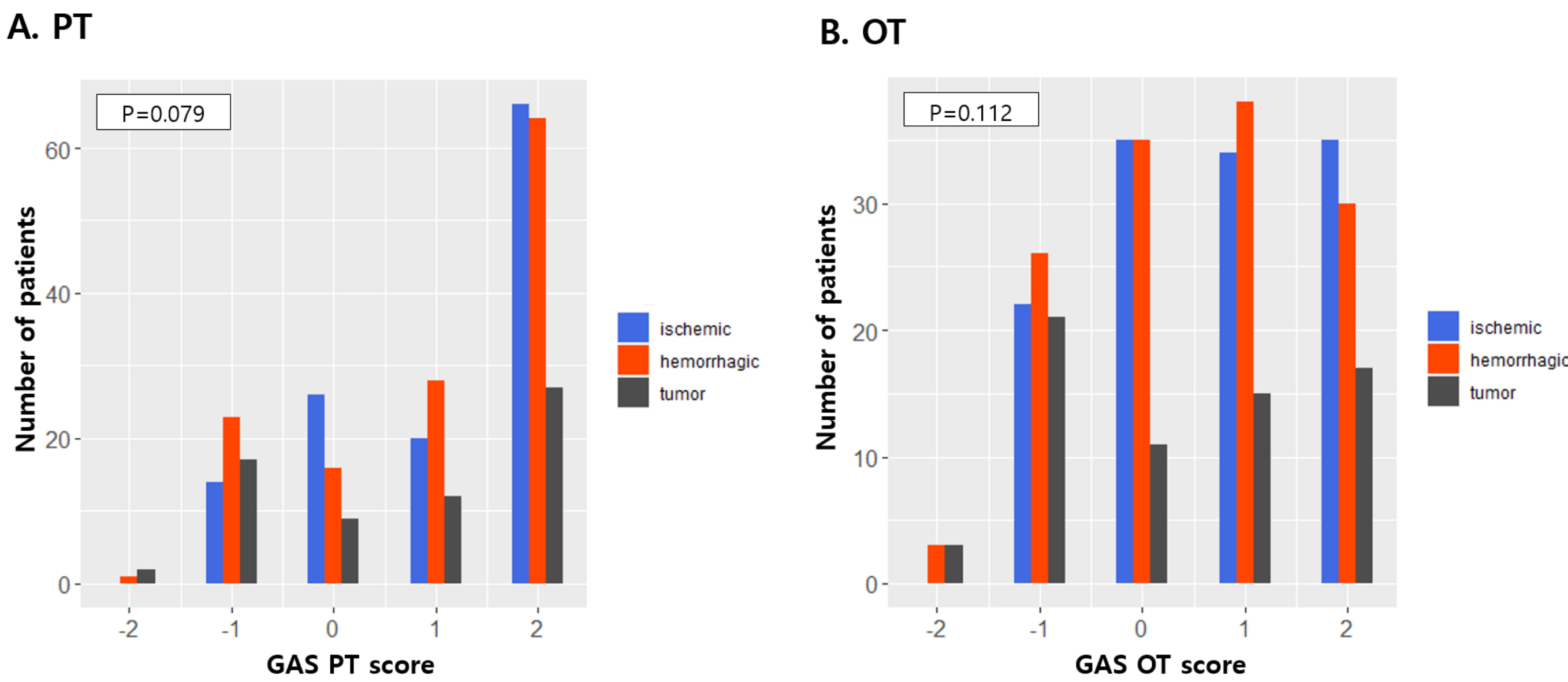
- Physical therapy GAS reference
  - Medical Research Council (MRC), Berg Balance Scale (BBS), Functional Ambulation Classification (FAC)
- Occupational therapy GAS reference
  - Fugl-Meyer Assessment (FMA), Mini-mental Status Examination (MMSE), modified Barthel Index (MBI)

Results

Participants characteristics according to the GAS in physical therapy

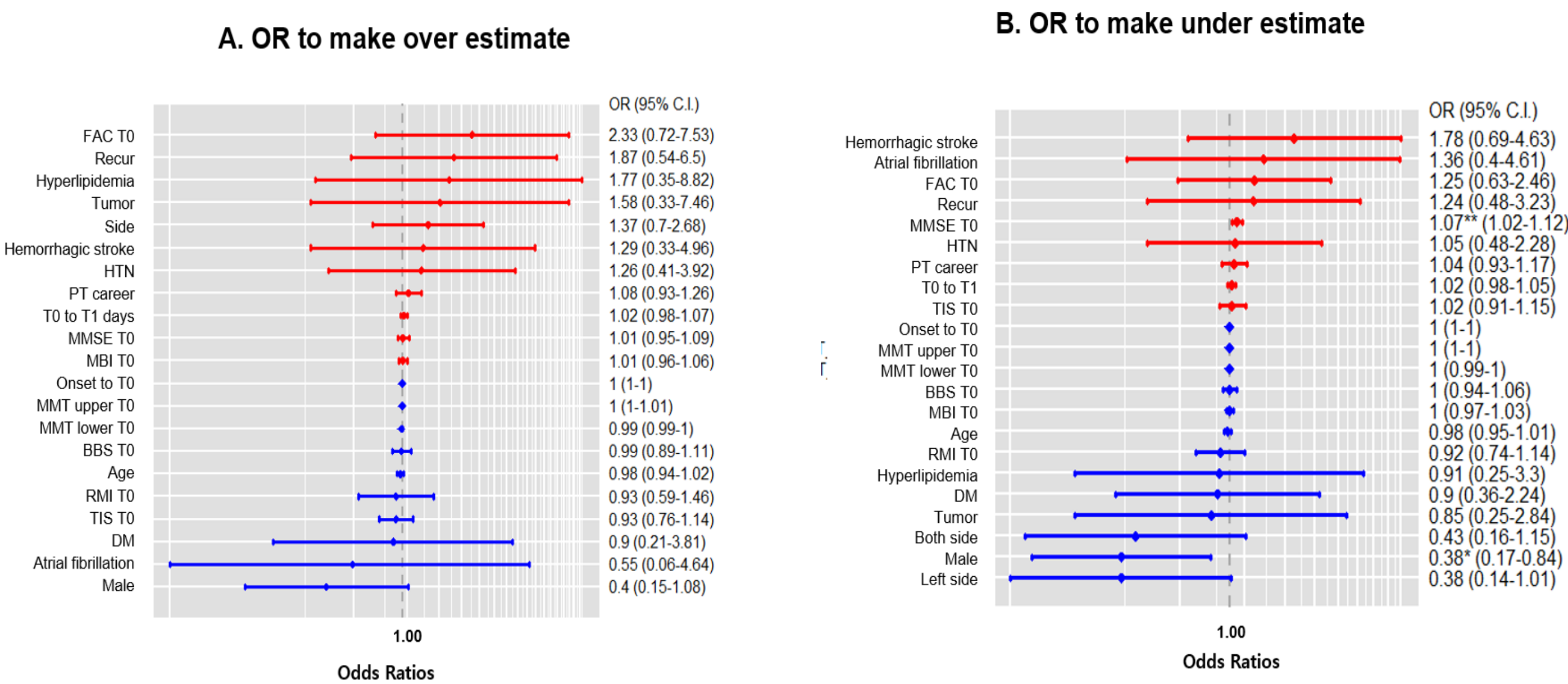
	Underestimated (N=217)	Accurate estimate (N=51)	Overestimated (N=57)	p-value
Age (years)	59.00 [50.00;70.00]	66.00 [56.00;74.00]	61.00 [52.00;69.00]	0.02
Sex				0.067
F	108 (49.77%)	19 (37.25%)	34 (59.65%)	
M	109 (50.23%)	32 (62.75%)	23 (40.35%)	
Diagnosis				0.02
Ischemic stroke	86 (39.63%)	26 (50.98%)	14 (24.56%)	
Hemorrhagic stroke	92 (42.40%)	16 (31.37%)	24 (42.11%)	
Tumor	39 (17.97%)	9 (17.65%)	19 (33.33%)	
HTN, yes	122 (56.22%)	28 (54.90%)	33 (57.89%)	0.951
DM, yes	42 (19.35%)	11 (21.57%)	10 (17.54%)	0.87
Hyperlipidemia, yes	22 (10.14%)	4 (7.84%)	9 (15.79%)	0.361
Atrial fibrillation, yes	18 (8.29%)	5 (9.80%)	2 (3.51%)	0.399
Recurrence, yes	39 (17.97%)	9 (17.65%)	14 (24.56%)	0.509
Onset to T0 (days)	27.00 [17.00;53.00]	37.00 [23.00;80.00]	82.00 [37.00;129.00]	<0.001
T0 to T1 (days)	35.00 [31.00;39.00]	34.00 [31.00;40.50]	35.00 [32.00;44.00]	0.327

Distribution of Goal Attainment Scale scores according to disease type



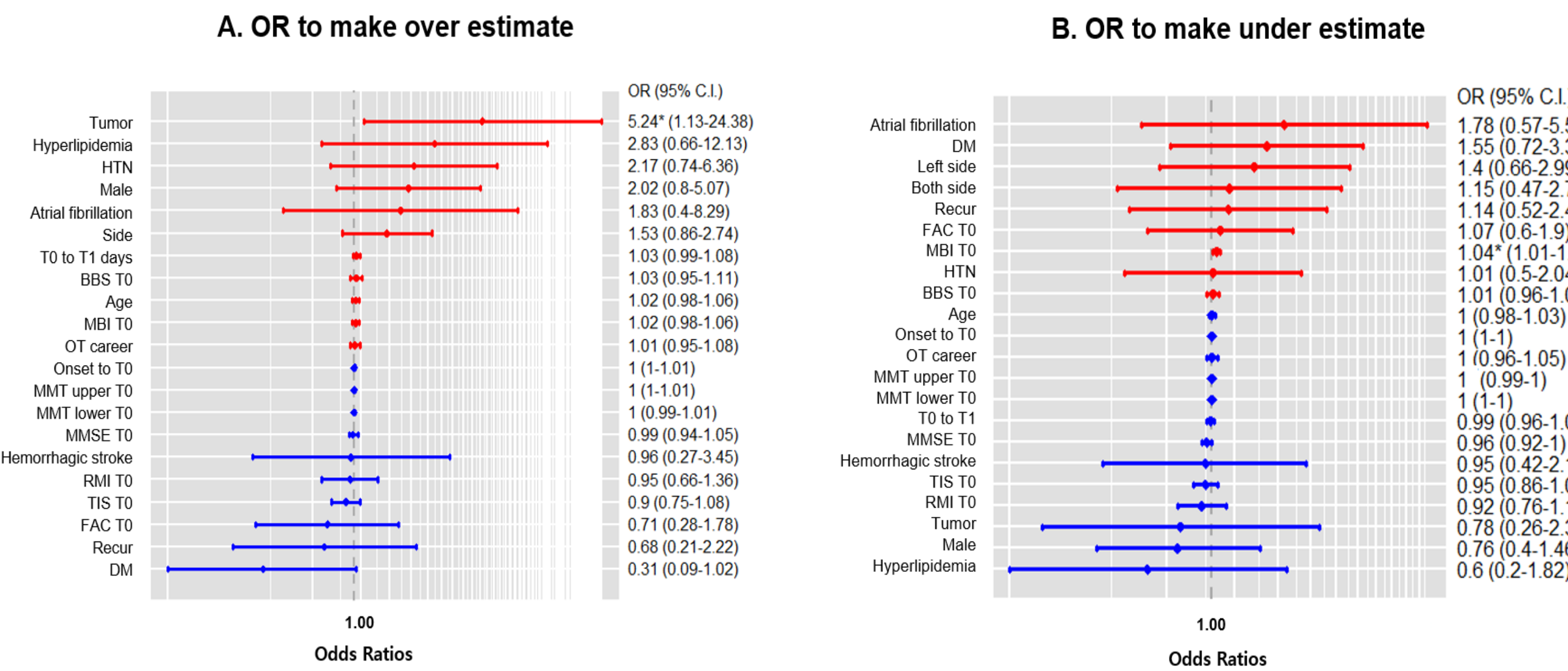
- The distribution of both GAS for PT (p=0.079, Figure A) and GAS for OT domains (p=0.112, Figure B) scores showed no differences between patient groups of different diagnoses.

Plot for adjusted odds ratios of the goal attainment groups in PT



- Physical therapists tend to make accurate estimations in male patients or patients with lower cognitive status at baseline.

Plot for adjusted odds ratios of the goal attainment groups in PT



- Occupational therapists tended to make more accurate estimations in patients with IS than in those with brain tumors and lower ADL levels.

Conclusion

- Several factors including baseline functional level and diagnosis were found to affect goals in PT and OT domain. The therapist's career and experience did not significantly affect this prediction.
- Setting more accurate anticipated goals requires a thorough understanding of the patient from various perspectives and modifying the goal based on continuous progress monitoring. Moreover, the GAS can help therapists through the self-assessment process.

Acknowledgement

This research was supported by a grant from the Korea Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI) funded by the Ministry of Health & Welfare, Republic of Korea (grant number: RS-2023-00262005) and an IITP grant from the Ministry of Science and ICT (2021-0-00742 Development of Core Technology for Whole-body Medical Twin).