Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Conclusion: Both large-bore thrombectomy and CDL resulted in a decrease in RV/LV ratio within 72 hours, however, neither treatment demonstrated significant superiority. Neither group demonstrated a significant change in vasopressor requirement, but the thrombectomy group had significantly reduced oxygen requirement post-intervention.

Abstract No. 281

Catheter-directed thrombolysis for pulmonary embolism: an analysis of the National Inpatient Sample

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Purpose: To evaluate outcomes following catheter-directed thrombolysis (CDT) compared with intravenous thrombolytic therapy (IVT) for pulmonary embolism (PE) in the acute care setting

Materials and Methods: The National Inpatient Sample from 2016 to 2019 was queried for all patients with PE treated with CDT or IVT. Primary outcomes were inpatient mortality, length of stay (LOS), and total cost. Secondary outcomes were intracranial hemorrhage (ICH) and need for transfusion. Patient and hospital demographics were used to adjust for measurable confounders. chi-squared, Mann-Whitney U, and hierarchical logistic regression analyses were used as appropriate. A propensity-score matched analysis was performed. A P value < 0.05 was defined as statistically significant.

Results: 5,101 patients were included in the study with 2,475 in the IVT cohort and 2,626 in the CDT cohort. In the unadjusted cohort, a significantly higher proportion of patients in the CDT group had PE with associated cor pulmonale (38.8% vs 30.7%; $P < 0.001$). The IVT cohort had a significantly higher proportion of patients with concurrent hemodynamic instability (10.7% vs 5.8%; $P < 0.001$) and a higher risk of pre-procedural inpatient mortality (25.9% vs 20.0% with All Patient Refined Diagnosis Related Groups, Risk of Mortality subclass 4).

Race, severity of illness, presence of cor pulmonale, and hemodynamic instability were significant predictors of mortality ($P < 0.05$) on hierarchical logistic regression. Compared with IVT, CDT was not a significant predictor of mortality (OR 0.819; 95%CI 0.597–1.124; $P = 0.216$). Patients in the CDT cohort had higher hospitalization costs ($109,243 vs $93,072; $P < 0.001$) and a longer LOS (5.2 vs 5.0 days; $P = 0.002$). Post-procedural LOS was not significantly different between the two groups (4.72 vs 4.57 days; $P = 0.09$). CDT was a significant negative predictor of ICH (OR 0.306; 95%CI 0.121–0.771; $P = 0.012$) and the need for transfusion (OR 0.645; 95%CI 0.422–0.984; $P = 0.042$). All significant predictors persisted in the PSM cohort.

Conclusion: There is no significant difference in inpatient mortality for patients receiving CDT compared with IVT for PE, despite a significant decrease in risk of ICH and need for transfusion. Patients in the CDT cohort had a significant increase in hospitalization cost with no significant difference in post-procedural LOS compared with those in the IVT cohort.

Scientific Session 29

Education and Demographics in IR

Tuesday, June 14, 2022
3:00 PM–4:30 PM

Abstract No. 282

Impact of the COVID-19 pandemic on the 2021 integrated interventional radiology residency match: analysis of the Texas STAR database

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Purpose: To assess the impact of the COVID-19 pandemic on the 2021 integrated interventional radiology match in terms of number of programs applied to, interviews received, applicant characteristics, and applicant-reported costs and perspectives of the application process

Materials and Methods: Survey data from applicants to interventional radiology residency programs were obtained from the Texas Seeking Transparency in Applications to Residency (STAR) database. Applicant differences between the virtual application cycle (2021) and in-person application cycles (2018, 2019, and 2020) were analyzed using two-sided t-tests and chi-square tests.

Results: A total of 194 interventional radiology residency applicants responded to the survey, including 147 (105 matched) from the application years 2018-2020 and 47 (40 matched) from application year 2021. In 2021, 40% of matched applicants reported matching at a program where they had a geographic connection, compared with 43.8% in prior years (P=0.68). 2021 applicants reported applying to more programs than applicants in prior years (mean 43.2 vs. 37.0, $P = 0.043$). 2021 applicants also reported receiving more interview invites and attending more interviews than applicants in prior years: 20.4 vs 15.8 interview invites received (P=0.0023) and 16.7 vs 13.8 interviews attended (P=0.0078).

There was a statistically significant difference in the average step 1 (249 vs 244, P=0.018) and non-significant difference in step 2 scores (255 vs 253, P=0.19) in the 2021 match cohort vs the 2018-2020 match cohort.

66% of applicants during the 2021 match year either strongly agreed or agreed that they would be in favor of continuing virtual interviews, 19% either strongly disagreed or disagreed, and 15% were neutral. Average total cost of the application process for integrated interventional radiology (IR) applicants was reported to be $2,409 in 2021 and $8,467 in 2018-2020. Most of the costs savings came from in-person interviews ($4,366) and away rotations ($2,125).

Conclusion: Based on this sample, IR and diagnostic radiology applicants during the 2021 virtual application cycle applied to significantly more programs and attended significantly more interviews compared with those that participated in in-person

application cycles (2018–2020). There was no significant difference in the proportion of applicants that matched at programs where they reported a geographic connection in the virtual cycle vs in-person cycles. Most students are in favor of continuing virtual interviews in the future and virtual applicants saved an average of $6,058 compared with in-person applicants during the application process.

Abstract No. 283

The impact of endovascular simulator training on simulated procedural performance, knowledge acquisition, and attitudes toward interventional radiology in medical students

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Purpose: Limited research has been conducted on the impact of exposure to high-fidelity endovascular training simulators for medical students. Our purpose was to evaluate the effectiveness of using the Mentice VIST Lab endovascular training simulator for changes in (1) the endovascular procedural skill set, (2) medical knowledge, and (3) subjective attitudes among medical students.

Materials and Methods: Twenty-one preclinical medical students (38% female; 5 MS1,16 MS2) were recruited to participate in small-group instructional sessions led by a board-certified Vascular Interventional Radiologist. The sessions included one hour of didactic learning followed by a two-hour training paradigm on the Mentice VIST Lab endovascular training simulator. Sessions focused on either Uterine Artery Embolization [UAE] (n=11 participants) or Transarterial Chemoembolization [TACE] (n=10 participants). Preceding the instructional session, each participant received a one-hour individual, hands-on simulator briefing and completed baseline evaluations.

Procedural metrics (i.e., number of handling errors, total procedure time, amount of contrast used, total fluoroscopy time, and patient and operator radiation exposure) for each participant were tracked on the simulator pre- and post-instructional sessions. Objective knowledge measures (procedure-based and vascular anatomy) and subjective attitudes about interventional radiology (IR) were measured using pre- and post-quizzes and surveys.

The objective performance data and subjective data were analyzed using paired t-tests and Wilcoxon signed-rank tests.

Results: Among both groups, statistically significant ($P < 0.05$) average percent improvements were seen in total procedure time (42% UAE; 55% TACE), amount of contrast used (45% UAE; 20.7% TACE), total fluoroscopy time (47% UAE; 56% TACE), measures of radiation exposure (39% UAE; 41% TACE), and number of handling errors (40% UAE, 36% TACE) compared with baseline evaluations. Procedure-based and vascular anatomy knowledge improved significantly against baseline pre-instructional session scores for both UAE (59% versus 94% correct) and TACE (74% versus 100% correct) groups. Subjective measures including interest in IR, knowledge of IR, attractiveness of IR, and likelihood of choosing IR increased after the simulator training sessions.

Conclusion: Our research supports the beneficial role of exposure to endovascular simulator training in early medical education. It has the potential to improve procedural skills, medical knowledge, and interest in endovascular specialties among medical students.

Abstract No. 284

Demographic trends in female interventional radiology trainees with the advent of the integrated interventional radiology residency: a 12-month update

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Purpose: Examine changes in gender representation in the interventional radiology (IR) training pool since the advent of the integrated IR residency in 2015-2021

Materials and Methods: Electronic Residency Application Service (ERAS) and Accreditation Council for Graduate Medical Education (ACGME) Data Resource Book records were reviewed from 2015-2021 for Integrated IR residency/Vascular and IR (VIR) fellowship applicant data and active IR resident and VIR fellow data, respectively. Two-tailed Fisher's exact tests and chi-square analyses were used to compare trainees between application cycles.

Results: In the 2017 application cycle, 23% (247/1062) of integrated IR residency applicants were female, with similar interest in the 2018, 2019, and 2020 cycles [$c^2(3, N = 2863) = 5.1, P = 0.17$]. In comparison, 12% of VIR fellowship applicants were female from 2017-2020. Female integrated IR residents demonstrated a consistent upward trend during this period with female integrated IR residents representing 22% (130/591) of all integrated IR residents in the 2020-2021 academic year. This is in comparison to the period prior to the integrated IR residency when female IR trainees represented 8% (23/275) of all IR trainees in 2015-2016 ($P < 0.0001$) (Table 1).

Conclusion: With the advent of the integrated IR residency, there continues to be an increasing female constituency with more than a doubling of female IR trainees, portending a continued reduction in the IR gender disparity in the future.

284.1.

Year	IR Residency Applicants	Vascular and IR Fellows	Integrated IR Residents	Total Female IR Trainees
2015-2016	Data unavailable	8 (23/275)	0	8 (23/275)
2016-2017	Data unavailable	16 (46/284)	15 (2/13)	16 (48/297)
2017-2018	23 (247/1062)	13 (39/290)	13 (8/60)	13 (47/350)
2018-2019	19 (99/522)	11 (29/274)	18 (45/246)	14 (70/498)
2019-2020	23 (102/452)	14 (35/256)	18 (78/424)	17 (113/680)
2020-2021	24 (198/827)	15 (27/184)	22 (130/591)	20 (157/775)