Introduction Cerebral vasospasm (CV) and delayed cerebral ischemia continue to be a devastating consequence of subarachnoid hemorrhage; however, few studies address factors that predictor failure of initial rescue therapy (refractory vasospasm). We sought to determine factors associated with refractory vasospasm.
Materials and Methods A retrospective chart review of consecutive patients admitted from 2017-2019 with spontaneous subarachnoid hemorrhage was done. Factors including degree of vasospasm, sex, age, Hunt Hess grade (HH), mFS, discharge mRS, type of IA therapy, distribution of vasospasm, and number of treatments were collected. Refractory CV was defined as requiring more than 2 therapeutic cerebral angiograms. Data was analyzed as categorical variables using the Fischer's exact test as well as a binary regression analysis.
Results Out of 69 patients who developed delayed cerebral ischemia, 16 (23%) had refractory CV of which 11 (69%) had severe CV and 5 (31%) had moderate CV on their initial cerebral angiogram. Gender, type of aneurysm treatment (coil vs clip), HH, mFS, age and the type of intra-arterial calcium channel blocker used were not significantly associated with refractory CV ($P>0.05$). Patients with moderate- severe CV (100% vs 58%) and those with CV involving multiple vessels (100% vs 58%) were associated with refractory CV ($P<0.05$). 13 out of the 16 patients who developed angiographic improvement of CV with intra-arterial CCB on their first DSA progressed to develop refractory CV. Binary logistic regression indicates that the severity of CV on initial cerebral angiogram is a significant predictor of refractory CV ($P<0.05$). Patients with refractory vasospasm had higher mRS at discharge ($P=0.05$).
Conclusion Severity of CV on initial angiogram is a significant predictor of refractory CV.
Disclosures B. Ryu: None. **T. White:** None. **T. Rebeiz:** None. **K. Shah:** None. **J. Turpin:** None. **H. Woo:** None.

E-139 DURATION OF VASODILATORY ACTION AFTER INTRA-ARTERIAL INFUSIONS OF CALCIUM CHANNEL BLOCKERS IN ANIMAL MODEL OF CEREBRAL VASOSPASM

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Background In medically refractory vasospasm, invasive intervention may be required. A commonly used approach is intra-arterial (IA) drug infusion. Although calcium channel blockers (CCBs) have been widely applied in this setting, studies comparing their efficacies and durations of action have been few. This study was performed to compare attributes of three CCBs (nicardipine, nimodipine, and verapamil), focusing on duration of the vasodilatory action based on angiography.
Methods Vasospasm was produced in New Zealand white rabbits (N = 22) through experimentally induced subarachnoid hemorrhage and confirmed in each via conventional angiography, grouping them by IA-infused drug. Afterchemoangioplasty, angiography was performed hourly for 5 h to compare dilated and vasospastic arterial diameters. Drug efficacy, duration of action, and changes in mean arterial pressure (relative to baseline) were analyzed by group.
Results Effective vasodilation was evident in all three groups immediately after IA drug infusion. The vasodilative effects of nimodipine and nicardipine peaked at 1 h and were sustained at 2 h, returning to initial vasospastic statesat 3 h. In verapamil recipients, effects were more transient by comparison, entirely dissipating at 1 h. Only the nicardipine group showed a significant 3-h period of lowered blood pressure.
Conclusions Although nimodipine and nicardipine proved longer acting than verapamil in terms of vasodilation, their effects were not sustained beyond 2 h after IA infusion. Further study is required to confirm the vasodilatory duration of IA CCB based on perfusion status, and an effort should be made to find new alternative to extend the duration.
Disclosures J. Lim: 1; C; Chungnam National University Hospital Research Fund. **K. Jung:** None. **H. Byoun:** None. **Y. Cho:** 1; C; Seoul National University.

E-140 MORPHOLOGICAL DIFFERENCES OF RUPTURED VERSUS UNRUPTURED WIDE NECK ANEURYSMS: INSIGHTS FROM THE EVERRUN REGISTRY

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Introduction Wide neck aneurysms (WNAs) have classically been defined as having a neck width greater than 4 mm ($N>4$) and/or dome-to-neck ratio less than 2 ($DTNR<2$). Although there is a surplus of literature on the various treatment options for WNAs, there is less focused on the natural history of both ruptured and unruptured WNAs.
Purpose To utilize a previously collected multicenter WNA registry/EVERRUN registry and compare baseline patient and aneurysm characteristics of ruptured vs. unruptured WNAs.
Methods Ruptured and unruptured, saccular, not previously treated WNAs ($N>4$, $DTNR<2$, or both) were included. Differences in WNA morphology and patient demographics were compared between ruptured (R) and unruptured (U) cohorts. Statistical significance was set at an alpha level of $p<0.05$. All analysis was performed using R(v. 4.2.1)
Results The analysis included 310 WNA (87 Rvs. 223 U). There was a female preponderance in both groups without significant difference (R: 80.5%, U: 75.8%). Ruptured WNA had significantly smaller neck size(R: 3.72±1.39 mm, U: 4.5 ±1.78mm) and dome width (R: 5.04±2.39mm, U: 6.29±3.37 mm)($p<0.05$) with a trend towards reduced height (R: 5.04 ±2.16mm, U: 5.74±3.01mm)($p= 0.05$). Ruptured aneurysms had higher rates of $DTNR <2$ alone (R: 60.9%, U: 42.2%) and unruptured aneurysms having higher rates of both $DTNR <2$ and $N>4$ (R: 34.5%, U: 50.7%, $p<0.05$). $N>4$ alone was also more prevalent in the unruptured cohort (R: 4.6%, U: 7.2%). ICA-Pcomm location was more common in the ruptured cohort (R: 21.1%, U: 9.4%), while ICA-Oph location was more common in the unruptured cohort (R:2.3%, U: 17.0%)($p<0.05$). Acomm location was also higher in the ruptured cohort (R24.1%, U: 15.2%). Higher percentages of Asian (A), African American (AA), and Hispanic (H) patients were in the ruptured cohort compared to Caucasian (C)