**Results** 187 geometries were created. The total reduction in cross sectional area had the greatest effect on FFR. All 80% concentric stenoses studied had an FFR of <0.80, regardless of shape, length or number of lesions. However, when geometries with the same stenosis severity were compared, multiple lesions, increased lesion length, smaller vessel diameter and lower myocardial resistance were associated with lower FFR values. Using different diameter laws for our branched geometries, resulted in minimal difference to FFR values. Table 1 shows some examples of key FFR results derived from single vessel geometries. Table 1 shows some examples of key FFR results derived from single vessel geometries. Figure 1 and 2 display the geometries that produced these key vFFR results. Figure 1 displays geometries 1-4 and figure 2 geometries 5-8.

**Conclusion** vFFR is most affected by stenosis severity. However, changes to lesion shape, length, number and vessel diameter also impact vFFR. This data places these variables into perspective for clinicians when judging the significance of lesions in a diseased vessel.

**Conflict of Interest** None

hypotension (4.15%), kidney disease (acute renal failure 5.29%, chronic renal failure 8.88%) and anaemia (5.33%). In-hospital death increased from 1.0% with low HFRS to 13.9% with HFRS and length of stay increased from 2.9 days to 17.1 days from low to high HFRS. A cost difference was observed depending on frailty which was $17,743, $38,824 and $56,119 for low, intermediate and high HFRS, respectively. High frailty risk was independently associated with a significant increase in in-hospital death (OR 9.91 95%CI 7.17–13.71), bleeding complications (OR 4.99 95%CI 3.82–6.51) and vascular complications (OR 3.96 95%CI 3.00–5.23) as compared to patients with low risk of HFRS.

**Conclusion** Frailty is prevalent among patients who undergo PCI. There is a strikingly increased in frailty over time and those with high HFRS had a 10-fold increase in odds of mortality compared to low risk of frailty. Improved education and increased awareness of the impact of frailty could facilitate better tailored care to minimise risk of adverse outcomes and its associated costs in PCI.

**Conflict of Interest** None

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| 61 | THE IMPACT OF FRAILTY ON IN-HOSPITAL OUTCOMES AMONG PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION IN THE UNITED STATES |

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**Introduction** The proportion of elderly patients who undergo percutaneous coronary intervention (PCI) is growing. There is increasing awareness that frailty, which is common in the elderly, may be an important marker of adverse outcomes. This study evaluates a national cohort of patients who underwent PCI regarding the prevalence of frailty, changes over time, and associated outcomes using a validated Hospital Frailty Risk Score (HFRS).

**Methods** We included adults who underwent PCI procedures between 2004 and 2014 in the National Inpatients Sample. Frailty risk was measured using a modified HFRS based on ICD-9 codes using the cutoffs <5, 5–15 and >15 for low, intermediate and high HFRS. Multiple logistic regressions were used to examine the associations between HFRS group and adverse outcomes after PCI.

**Results** There were 7,306,007 admissions for PCI and 94.58% had a low HFRS(<5), 5.39% had an intermediate HFRS(5–15) and 0.03% had a high HFRS(>15). Frailty increased over time as the prevalence of intermediate or high frailty risk was 1.9% in 2004 to 11.7% in 2014. Common variables contributing to frailty in the PCI cohort appear to be fluid and electrolyte disorder (8.43%),

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| 62 | PROGNOSTIC IMPLICATION OF CONTRAST INDUCED ACUTE KIDNEY INJURY – A FIVE YEAR MORTALITY REVIEW |

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**Introduction** Contrast induced acute kidney injury (CI-AKI), defined as a delta rise in creatinine of >26.5 umol/L or a 50% relative rise within 48 hours following iodinated contrast, is associated with considerable mortality risk. Our previous study of 301 patients undergoing contrast coronary angiography/percutaneous coronary intervention (PCI) highlighted a CI-AKI rate of 9.3% at index procedure. Few studies have looked at long term prognosis, adverse events and mortality following CI-AKI. Our objective is to assess the 5 year mortality rate following contrast coronary angiography and to evaluate independent risk factors and presence of index CI-AKI on 5 year mortality.

**Methods** A prospective cohort study in a single cardiology centre in the UK was carried out from 2011–2013, the results of which have been previously published.1 In total 2,519 patients were screened, 321 (12.7%) of which had CKD, in total 301 (93.7%) patients were recruited. Written consent was obtained from all patients. Patient demographics, CI-AKI risk factors, CKD stage and contrast dose at initial contrast angiography were recorded. A Mehran risk score was calculated for each patient. Samples for plasma NGAL, serum L-FABP, serum KIM-1, serum IL-18 and serum creatinine were previously collected pre and post contrast angiography and statistically analysed to assess