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THE IMPACT OF SYSTEMATIC IMPLEMENTATION OF SPECT APPROPRIATENESS CRITERIA IN CARDIOLOGY AND PRIMARY CARE ON SPECT AND SUBSEQUENT INVASIVE PROCEDURES: A PROSPECTIVE AND RANDOMIZED CLINICAL TRIAL WITH ONE-YEAR FOLLOW-UP

Poster Contributions

Poster Sessions, Expo North

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Authors: *Jaime Rodríguez, Kaelin E. DeMuth, Marlow Hernandez, Howard Bush, Kenneth Fromkin, Hermann Stubbe, Nemer Dabage Forzoli, Diana Galindo, Robert Piloto, Jerry Ciocon, Jesus Loquias, Andrew Russell, Jose A. Gascon, Paola Salguero, C. Martin Harris, Randall Starling, Michael Shen, Cleveland Clinic Florida, Weston, FL, USA*

Background: The SPECT Appropriateness Criteria (AC) has been used for the last 7 years to improve SPECT and subsequent procedure utilizations. However, there is no prospective trial data on the change of procedure volumes after systematic implementation of AC in the cardiology and primary care clinic settings using Electronic Medical Records (EMR). MPI Optimization & Referrals (MORE) Trial is a single center, randomized and prospective study to investigate the long-term impacts of systematic implementation of AC on both SPECT/ subsequent invasive procedure volumes and clinical outcomes.

Methods: Consecutive 10,303 outpatients with 10 physicians were randomized into a control (CG) and interventional (IG) group. All patients were assessed using EMR and SPECT AC (2009). Recommendations to refer for SPECT in the IG were made only if patients were graded as Appropriate SPECT prior to their visits. No recommendations were made to CG. SPECT use through the 5-month study period was compared to the use 5 months prior to the trial. All patients were followed for 1 year after initial AC assessment for subsequent coronary angiography and PCI procedures.

Results: Compared to the baseline prior to the trial, SPECT volume did not change in CG, 64 to 68, but significantly increased in IG from 87 to 112, a 56% relative increase (2.1% vs. 1.4%; OR 1.56, $p < 0.01$). Among patients in the IG, there was a trend towards less coronary angiography from 174 to 128 vs. 176 to 147 in CG ($p < 0.06$) and a relatively significant decrease for PCI from 56 to 51 in IG compared to CG from 58 to 76 respectively ($p < 0.001$). No significant difference in cardiac events (MI and death) between CG and IG in the 1-year follow-up.

Conclusion: This is the first randomized clinical trial to demonstrate that using EMR and systematic implementation of SPECT AC in cardiology and primary care not only increased SPECT service volume appropriately but also lead to less subsequent invasive procedure utilization without adverse cardiac outcomes. Further studies are warranted for both procedure volumes and the clinical/financial outcomes using AC in the real world practice.