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Rapid Increase in Utilization Rates of Radionuclide Myocardial Perfusion Imaging and Related Procedures Between 1996 and 1998: What are the Possible Explanations?

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Rapid Increase in Utilization Rates of Radionuclide Myocardial Perfusion Imaging and Related Procedures Between 1996 and 1998: What are the Possible Explanations?

Radionuclide myocardial perfusion imaging (RMPI) is a commonly used noninvasive nuclear scan to detect myocardial ischemia, or reduced flow to portions of the heart muscle resulting from blockages in the coronary arteries. These studies are performed by radiologists, cardiologists, and, to a lesser extent, other physicians. Concern was recently raised by the Office of Inspector General of the Department of Health and Human Services about rapid increase in utilization of this test.¹ The fiscal year 2000 work plan of the DHHS OIG specifically identified radionuclide myocardial perfusion imaging as a medical service undergoing unusually rapid utilization growth. Among the many thousands of physician services offered to Medicare patients, it was the only one specifically targeted by the OIG for assessment for medical appropriateness.

To determine the degree of growth of this procedure and to ascertain possible causes, we used the 1996 and 1998 National Medicare Part B databases to study utilization of the four primary CPT-4 codes for RMPI, and also of two supplementary codes for "add-on" left ventricular wall motion or ejection fraction determinations. These supplementary codes relate to studies done in conjunction with the primary RMPI exam to assess function of the left ventricle. Utilization rates per 100,000 Medicare fee-for-service beneficiaries were calculated for cardiologists, radiologists, and other physicians. We similarly studied utilization rate changes for stress echocardiography (also a noninvasive test) and for cardiac catheterization, an invasive procedure for which radionuclide imaging might be substituted.

Our findings were as follows: The overall utilization rate of RMPI per 100,000 Medicare fee-for-service beneficiaries rose from 4046 in 1996 to 4820 in 1998, a 19.1% increase. However, there was a striking difference between the utilization rate changes among cardiologists and radiologists. Among cardiologists, the rate grew from 1771 to 2413 (+36.3%) while among radiologists it grew from 1958 to 2031 (+3.7%). Growth in utilization of RMPI was especially high in private offices of cardiologists, where it increased 45.8% during the 2-year interval. The overall utilization rate of the relatively new "add-on" wall motion and ejection fraction codes rose from 1006 in 1996 to 3657 in 1998, a 264% increase. Utilization grew rapidly among all three physician groups. By 1998, the ratio of these "addon" examinations to primary RMPI examinations was 0.94 among cardiologists, compared with 0.53 among radiologists. This meant that a patient undergoing an RMPI exam with a cardiologist was almost twice as likely to have an "add-on" wall motion or ejection fraction determination as if he/she had been examined by a radiologist. Performance by cardiologists of stress echocardiography and cardiac catheterization/ coronary angiography increased during the 2-year interval by 24.2% and 8.7% respectively. Radiologists have virtually no role in either of these procedures.

In summary, utilization of RMPI examinations increased rapidly between 1996 and 1998. However, growth was almost ten times as high among cardiologists as among radiologists. RMPI examinations performed by radiologists are invariably referred to

them by other physicians, while RMPI examinations performed by cardiologists are often self-referred. Hence, it seems likely that self-referral is a cause of the marked difference in utilization rate increases.

References

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