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Continuity of care in acute coronary syndrome:
why dedicated clinics for post-acute coronary syndrome management make the difference

Maria Maiello,[1] Francesco Proce,[2] Cosima Caputo,[2] Pasquale Palmiero[1,2]

[1]Cardiology Clinic, Local Health Unit of Brindisi n.1, Brindisi; [2]Medical School, University of Bari, Brindisi, Italy

Correspondence: Pasquale Palmiero, Medical School, University of Bari, Brindisi, Italy.
Tel.:+39 0831 536556.
E-mail: pasquale.palmiero@uniba.it

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Abstract

Acute coronary syndrome (ACS) requires comprehensive post-discharge management to improve outcomes and prevent recurrence. This study evaluates the effectiveness of a structured, multidisciplinary Diagnostic-Therapeutic Care Pathway implemented in the Local Health Unit of Brindisi n.1 compared to traditional outpatient management by general practitioners (GPs). A retrospective analysis was conducted on 200 patients discharged after ACS: 100 were managed through a structured post-ACS clinic (network group), and 100 were followed on demand by GPs (control group). Clinical variables, therapeutic adherence, and risk factor control were assessed over 12 months. The network group showed superior clinical outcomes. Low-density lipoprotein cholesterol targets (<55 mg/dL) were reached by 87% of network patients *vs.* 34% of controls. Blood pressure was controlled in 98% of the network group *vs*. 88% in controls. Glycemic control (hemoglobin A1c <6.5%) was achieved in 78% of diabetic patients in the network *vs.* 64% in controls. All network patients received dual antiplatelet therapy, compared to 56% in the control group. Smoking prevalence was lower in the network group (11% current smokers) *vs.* controls (31%). Despite a higher mean body mass index (28.5 *vs.* 27.8), the network group demonstrated better overall metabolic control. The integrated care model significantly improved adherence to evidence-based therapies and achievement of cardiovascular risk targets. These results support structured follow-up pathways as a superior strategy in secondary prevention of ACS, promoting continuity of care, patient education, and therapeutic optimization. Widespread implementation of similar models could enhance long-term cardiovascular outcomes and reduce healthcare burden.

Introduction

Acute coronary syndrome (ACS) is one of the leading global health emergencies and a primary cause of mortality worldwide. It encompasses a spectrum of conditions, including acute myocardial infarction and unstable angina.[1] Prompt and appropriate treatment of ACS is critical for reducing mortality rates and improving patient outcomes.[2,3] Early diagnosis and effective therapy are essential to minimize long-term complications, requiring a multidisciplinary approach that involves physicians, nurses, and other healthcare professionals,[4] not only during the acute phase of the disease but especially in secondary prevention.[5] Preventing this condition consists of educating patients, promoting healthy lifestyles, and, most importantly, monitoring and managing cardiovascular risk factors to achieve specific target values. A key aspect is shifting care dynamics toward more personalized treatment, emphasizing a patient-centered approach that fosters dialogue and collaboration among healthcare professionals. Optimizing care pathways and creating a supportive care environment are essential to encourage patient adherence to treatments, thereby improving clinical outcomes and reducing mortality and complication rates. The Diagnostic-Therapeutic Care Pathway (PDTA) for the follow-up of ischemic patients is designed to provide an organized and predetermined management approach, aligned with clinical guidelines, for post-ACS patients.[6] Its goal is to ensure continuity of care after hospital discharge, improve prognosis, prevent disease progression, and promote healthy lifestyle habits, particularly adherence to pharmacological therapy and lifestyle modification recommendations. The OASIS study demonstrated that patients who failed to follow post-discharge recommendations, such as resuming smoking or neglecting dietary and physical activity guidance, faced a higher risk of adverse events, including recurrent myocardial infarctions and strokes.[7] While new drugs and advancements in myocardial revascularization techniques have reduced in-hospital mortality rates, they have not significantly impacted mortality or the incidence of cardiovascular events at 1 month, 6 months, or 1 year post-discharge.[8] PDTAs establish a collaborative framework between hospitals and community-based healthcare to systematically monitor patients after discharge, ensuring continuity of care and enhancing the effectiveness of therapies.[9] Our study evaluates whether enrolling patients in a specialized diagnostic and therapeutic pathway, a bridge between hospital care and community healthcare, is more advantageous than traditional hospital discharge with a referral to the general practitioner (GP), through a retrospective evaluation of cardiovascular risk factor target achievement and adherence to prescribed treatments in patients followed by a dedicated post-ACS follow-up clinic compared to those managed on-demand by GPs.

Materials and methods

There is a Comprehensive Network for Post-ACS Management within the Local Health Unit (ASL) of Brindisi, a robust hospital-to-community network is in place to provide effective follow-up care for patients discharged after an ACS. The objective is to ensure seamless care continuity, fostering adherence to lifestyle modifications and prescribed therapies, and achieving guideline-recommended therapeutic targets.

Upon hospital discharge, patients are referred to a dedicated cardiology outpatient clinic for long-term management. They receive a discharge letter and a clinical checklist detailing their medical condition and current treatment plan. This marks the beginning of their post-acute care journey, designed to guarantee ongoing support and monitoring. Patients discharged from an ACS-designated Hub, including those diagnosed with ST-elevation myocardial infarction (STEMI),[10] non-ST-elevation myocardial infarction (NSTEMI),[11] myocardial infarction with non-obstructive coronary arteries (MINOCA), or ischemia with no obstructive coronary arteries (INOCA),[12] who reside within the ASL Brindisi region, are enrolled in a structured care pathway. This ensures constant follow-up and collaboration between hospitals, GPs, and cardiologists. The discharge letter and clinical checklist are critical tools for communicating the patient's status to their care team.

Key details in the documentation include: i) the type and location of ACS (*e.g.*, STEMI, NSTEMI, MINOCA, INOCA); ii) left ventricular ejection fraction (LVEF) percentage;[13] iii) any hemodynamic,

arrhythmic, or mechanical complications during hospitalization; iv) type and extent of revascularization (complete or partial) and procedural details (angioplasty, coronary bypass);[14] v) prescribed pharmacological therapy.
The post-discharge care plan is well-structured to ensure continuous care, patient education, and meticulous cardiovascular risk management.

Follow-up plan
The first visit is conducted 30-45 days post-discharge, including clinical evaluation, electrocardiogram, risk factor assessment, medication titration, laboratory tests, physical activity recommendations, and scheduling of a 3-month follow-up visit. Echocardiography is performed for patients with LVEF<45%, mitral insufficiency, or acute thrombotic complications.
The subsequent visits are scheduled at 6 and 12 months, focusing on re-evaluating clinical conditions, adherence to pharmacological and non-pharmacological therapies, and planning invasive or non-invasive tests per guidelines for chronic coronary syndrome management.
This integrated care model emphasizes the critical collaboration between hospitals, GPs, and cardiologists to optimize patient adherence and long-term outcomes in the post-ACS phase.
This study aimed to assess the effectiveness of the care model implemented by the network by comparing the clinical outcomes of 100 patients enrolled in the program with 100 of a control group managed by the cardiology outpatient clinic following referral from their GPs, hereafter referred to as traditionally managed patients.

Results
The study compared two groups of patients: 100 post-ACS patients and 100 traditionally followed patients serving as the control group. In the post-ACS group, the mean age was 68.2 years, compared to 75.9 years in the control group. The results highlight a difference in both mean age and age distribution between the two groups. The post-ACS group included a higher proportion of younger patients compared to the control group. Specifically, in the post-ACS group, 36 patients (36%) were younger than 65 years, compared to 18 patients (18%) in the control group. Among patients aged over 65, the post-ACS group included 64 patients (64%) *vs.* 82 patients (82%) in the control group (Figure 1).
The analysis of sex distribution between the two groups showed the following differences: in the post-ACS group, 72 patients (72%) were male and 28 (28%) were female; in the control group, 76 patients (76%) were male and 24 (24%) were female.
Regarding body mass index (BMI), the mean value in the post-ACS group was 28.5, while in the control group it was 27.8. The BMI category distribution in the post-ACS group was as follows: normal weight, 21 patients (21%); overweight, 49 (49%); obese, 30 (30%). In the control group: normal weight, 27 patients (27%); overweight, 33 (33%); obese, 40 (40%).
Antiplatelet therapy differed significantly between groups. In the post-ACS group, all patients (100%) received dual antiplatelet therapy. In the control group, 56 patients (56%) received dual antiplatelet therapy, while 44 (44%) were treated with aspirin alone; this difference reached statistical significance ($p<0.000$), with a Chi-square value of 77.7 and an odds ratio (OR) of 0.
Smoking status analysis revealed that in the post-ACS group, 11 patients (11%) were current smokers, 32 (32%) were former smokers, and 57 (57%) had never smoked. In the control group, 31 patients (31%) were current smokers, 17 (17%) were former smokers; this difference reached statistical significance ($p<0.001$), with a Chi-square value of 6.2 and an OR of 2.3, and 52 (52%) had never smoked. Blood pressure control was achieved in 98 patients (98%) in the post-ACS group, while only 2 (2%) had uncontrolled hypertension. In the control group, 88 patients (88%) achieved target blood pressure values, whereas 12 (12%) did not; this difference reached statistical significance ($p<0.05$), with a Chi-square value of 7.6 and an OR of 6.6. Adherence to antihypertensive therapy was good in both groups, but optimal in the post-ACS group (Figure 2).

As for low-density lipoprotein (LDL) cholesterol, in the post-ACS group, 87 patients (87%) reached the LDL target level. 13 patients (13%) had LDL levels above 55 mg/dL; among them, 11 had values between 55 and 70 mg/dL, and only 2 had values above 70 mg/dL. In the control group, 34 patients (34%) reached the LDL target; this difference reached statistical significance ($p<0.000$), with a Chi-square value of 58.7 and an OR of 12.9. 39 (39%) had LDL levels between 55 and 70 mg/dL, and 27 (27%) had values exceeding 70 mg/dL (Figure 3).
About diabetes mellitus, 34 patients (34%) in the post-ACS group were diabetic, compared to 25 (25%) in the control group. Although the difference in diabetes prevalence was not statistically significant, the high prevalence in both groups confirms the strong association between diabetes and the development of acute cardiovascular events. Adherence to diabetes therapy, assessed by achieving hemoglobin A1c (HbA1c)<6.5%, was 78% (78 patients) in the post-ACS group and 64% (64 patients) in the control group; this difference reached statistical significance ($p<0.02$), with a Chi-square value of 4.7 and an OR of 1.9.

Discussion

This study aimed to assess the effectiveness of an integrated, multidisciplinary network model in managing cardiovascular risk compared to a standard care approach.[15] By analyzing clinical, demographic, and therapeutic variables among 100 post-ACS patients enrolled in the network and 100 control patients followed traditionally by cardiology outpatient services, we observed notable differences that highlight the potential benefits of structured care models.
The results indicate that patients managed through the network achieved better control of key modifiable cardiovascular risk factors, such as blood pressure,[16] lipid levels,[17] glycemic control,[18] and adherence to pharmacologic therapies.[5] This superior risk factor management appears to stem from several core elements of the network model: a predefined care pathway, regular follow-up visits, patient education, multidisciplinary collaboration, and strict adherence to evidence-based guidelines. One of the most evident differences between the two groups was the level of adherence to pharmacological therapy. In the post-ACS group, all patients were on dual antiplatelet therapy, aspirin and adenosine diphosphate P2Y12 receptor inhibitors, fully aligning with guideline recommendations.[19] In contrast, only 56% of control patients were prescribed dual antiplatelet therapy, with the remainder receiving monotherapy. This suggests that the structured approach of the network reinforces therapeutic adherence through regular monitoring and consistent reinforcement of clinical goals. Moreover, these patients demonstrated greater compliance with lipid-lowering strategies: 87% of post-ACS patients achieved the LDL cholesterol target level (<55 mg/dL), compared to only 34% in the control group. Although a small proportion of network patients remained above target, the majority of these maintained LDL levels below 70 mg/dL, still within an acceptable threshold. Conversely, in the traditionally managed group, more than a quarter of patients had LDL values above 70 mg/dL, exposing them to a significantly higher residual risk.
Therapeutic optimization in secondary prevention goes beyond lipid management. The intensified control of blood pressure observed in the post-ACS group, where 98% of patients had values within the target range, illustrates the impact of systematic follow-up and timely therapeutic adjustments. In contrast, 12% of control patients had uncontrolled blood pressure, indicating a possible lack of therapeutic re-evaluation and suboptimal follow-up.
In terms of anthropometric parameters, the post-ACS group had a higher mean BMI and a greater prevalence of overweight and obesity compared to controls;[20] however, despite the higher BMI, network patients displayed better metabolic control. This paradox underscores the relevance of structured care in mitigating the impact of adverse anthropometric profiles.[21] Additionally, while the control group showed a slightly higher proportion of normal-weight individuals, obesity was more prevalent than in the network group, suggesting a bimodal distribution that could reflect less consistent counseling and monitoring. The obesity paradox in ACS is a phenomenon still considered relevant and observed in numerous studies, including the most recent ones. Overweight or mildly/moderately obese patients often show better short-term outcomes after an ACS compared to

their normal-weight counterparts. However, this observation is complex and likely influenced by a series of confounding factors, the limitations of BMI as a measure of adiposity, and the intrinsic biology of the patients. It should not be interpreted as an indication that obesity is protective. The prevention and management of obesity remain crucial for general cardiovascular health. Further research is necessary to fully clarify the underlying mechanisms and to better define the role of body composition and physical fitness in ACS outcomes.[22] Smoking status also emerged as a key differentiator between groups. Only 11% of post-ACS patients were current smokers, compared to 31% in the control group. This marked difference may be attributed to both the increased psychological impact of a recent cardiovascular event and the continuous reinforcement of smoking cessation through the network's counseling services.[23] These findings emphasize the added value of behavioral support in sustaining lifestyle modifications, which are often insufficiently addressed in traditional follow-up settings.

Demographic characteristics revealed an interesting trend: the post-ACS group was younger on average, with a higher proportion of patients under the age of 65. This could reflect earlier exposure to cardiovascular risk or improved early diagnosis strategies. Furthermore, while men predominated in both groups, the post-ACS cohort included a slightly higher proportion of women. This may signal an evolving awareness and responsiveness in managing cardiovascular events in women, a population historically underdiagnosed and undertreated.

Another noteworthy observation concerns diabetes mellitus, which was prevalent in both groups (34% in post-ACS *vs*. 25% in controls), confirming the strong association between diabetes and cardiovascular disease. However, patients in the network demonstrated superior glycemic control, with 78% maintaining HbA1c values below 6.5%, compared to 64% in the control group. This finding reinforces the need for integrated care that simultaneously addresses both cardiovascular and metabolic health, leveraging interdisciplinary coordination to prevent long-term complications.

The effectiveness of the network model in influencing patient behavior is further supported by the observed differences in adherence and motivation. Post-ACS patients, possibly due to the emotional impact of an acute event and their engagement in an organized care structure, appeared more committed to their therapeutic regimens and lifestyle changes. Scheduled follow-up visits and structured health education were likely instrumental in sustaining this engagement. On the contrary, patients in the control group, who relied on irregular follow-up and self-motivation, displayed less consistent adherence and outcomes.

From a systems perspective, these findings underscore the superiority of structured, protocol-driven care in the secondary prevention of cardiovascular disease. The network model, with its emphasis on multidisciplinary collaboration and personalized follow-up, facilitates early intervention, rapid therapeutic adjustments, and reinforcement of patient compliance. Although the difference in outcomes could be partially attributed to selection bias (patients referred to the Network may have been more motivated or had better access to care), the consistency of the observed trends strongly supports the added value of integrated care models.

It is also worth noting that while the majority of the network patients achieved clinical targets, a residual fraction did not, highlighting the need for further refinement of care strategies. Personalized interventions enhanced motivational interviewing, and more intensive behavioral support may be necessary to bridge this gap.

Finally, the differences observed in clinical outcomes and behavioral indicators have broader implications for healthcare planning and policy. Integrating structured care pathways into standard cardiology practice could contribute to reducing the burden of recurrent cardiovascular events, improving patient quality of life, and optimizing resource utilization. Furthermore, the experience of the network model may serve as a template for managing other chronic conditions that require long-term adherence and coordinated care.

In conclusion, this study demonstrates that patients managed within a multidisciplinary, structured Network achieve superior outcomes across multiple domains of cardiovascular risk compared to those receiving traditional care. These results advocate for the adoption of integrated care models as a cornerstone of secondary prevention, capable of delivering sustained improvements in clinical parameters, therapeutic adherence, and patient engagement.

Conclusions

Our experience highlights the superiority of a structured, multidisciplinary network model in managing post-ACS patients. Despite a higher risk profile, network patients achieved better control of blood pressure, LDL cholesterol, and glycemia, with significantly higher adherence to therapy and lower smoking rates. In contrast, standard care patients showed suboptimal risk factor management and reduced compliance. These findings underscore the clinical value of coordinated, patient-centered strategies in improving adherence to guidelines, enhancing outcomes, and preventing recurrent cardiovascular events. Integrating such models into routine care may represent a pivotal step toward optimizing secondary prevention in cardiovascular disease.

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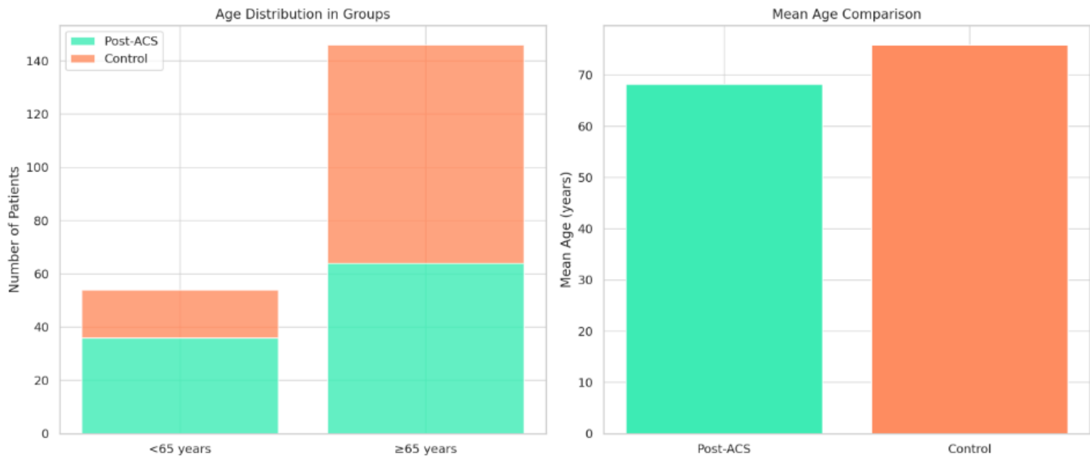

Figure 1. Age distribution in the two groups and comparison of the mean age. ACS, acute coronary syndrome.

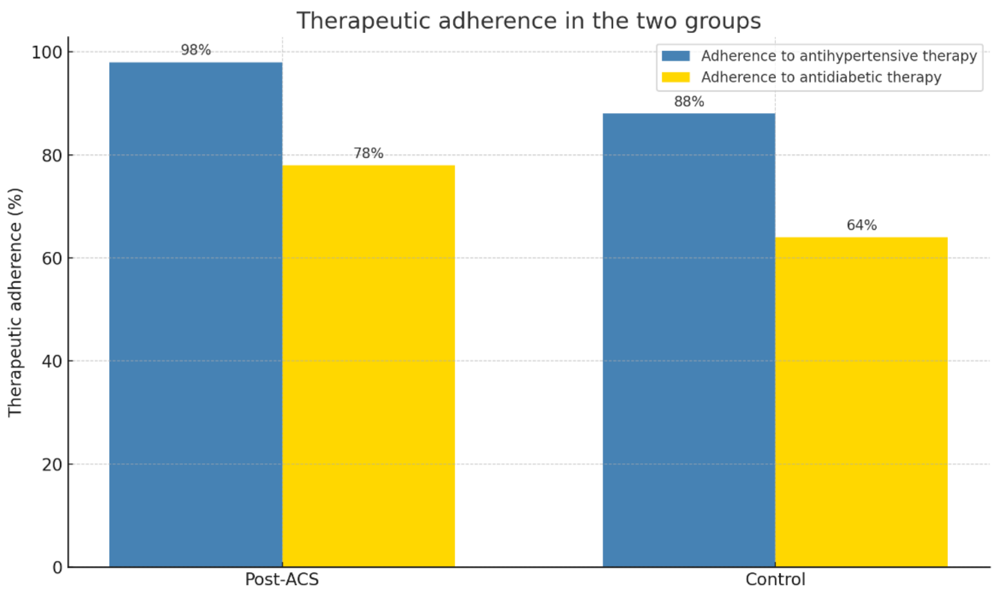

Figure 2. Adherence to antihypertensive and antidiabetic therapy. ACS, acute coronary syndrome.

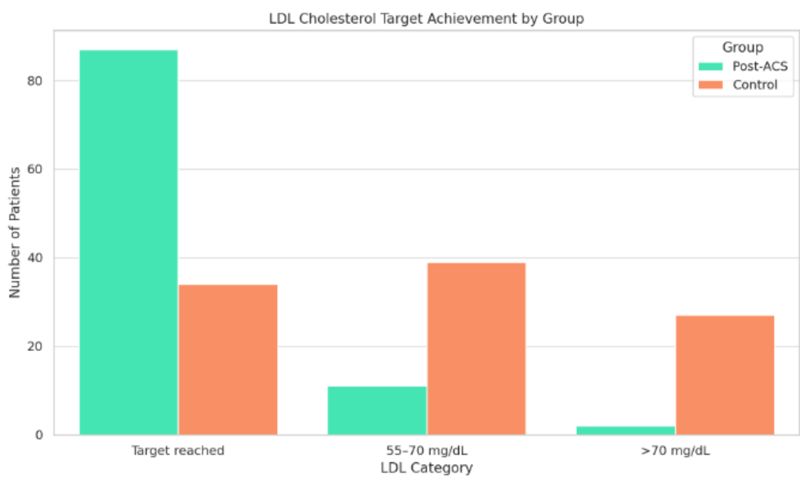

Figure 3. Achievement of cholesterol targets divided into three categories. ACS, acute coronary syndrome.