Waiting for coronary revascularization: a comparison of Dutch practice with a multi-national expert panel's priority scheme

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BACKGROUND / INTRODUCTION

- Waiting lists for coronary revascularization are frequently managed without any explicit queuing criteria. Patients may thus not receive priority based on the severity of their clinical symptoms. This is of particular concern in Europe where many countries have national health services or universal insurance and seek to insure that patients receive care on the basis of their need and not other factors. We therefore convened a European expert panel to develop criteria for maximum acceptable waiting times for coronary revascularization.

OBJECTIVES / GOALS

- Our goal was to asses the applicability of the multinational European expert panel's maximum recommended waiting time criteria and to compare actual waiting times for coronary revascularization with the panel's recommendations. We also sought to identify if there were non-patient related factors influencing waiting times not considered by the panel.

METHODS

Development of waiting list criteria

- We convened a panel of 13 surgeons and cardiologists from the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom to assess the appropriateness of, and priority for, a set of 430 hypothetical scenarios for patients who were referred for coronary revascularization in 1998. The panel rated appropriateness of these scenarios using a modified delphi process and then assigned a maximum waiting time, on a scale of 7 time frames, for all indications that were not judged inappropriate.

Time scale

< 24 hours
≤ 1 week
≤ 1 month
≤ 3 months
≤ 6 months
≤ 12 months
> 12 months

Clinical factors

Angina Class
Vessel disease
Ejection fraction
Stress test result
Surgical risk
Procedure*

- The clinical factors the panel considered important for determining the APPROPRIATENESS of revascularization for patients presenting with chronic stable angina are shown to the left
NOTE: The panel did not include type of procedure (i.e., angioplasty or bypass surgery) as a factor in their ratings for MAXIMUM WAITING TIME as they believed that waiting time should be based on clinical factors and not the procedure the patient was referred for.

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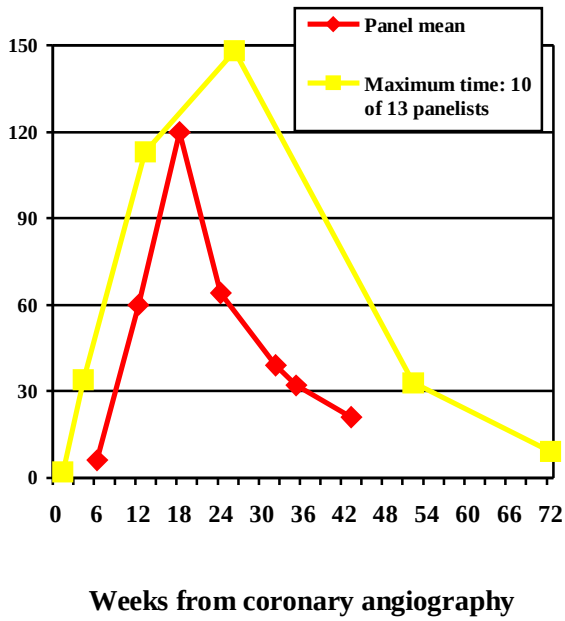
This figure shows the distribution of recommended waiting times for the 340 hypothetical clinical scenarios for coronary revascularization for patients presenting with chronic stable angina. Since there is no "gold standard" definition of a maximum waiting time we analyzed the effect of using two different definitions.

Using the panel's mean score will judge more cases with excess wait if the mean wait is > 18 weeks

If we use the maximum time recommended by at least 10 of the 13 panelists (i.e., 75% of the panel) we will judge more cases with excess wait if the mean wait is < 18 weeks.

We chose to use this latter definition for these analyses.



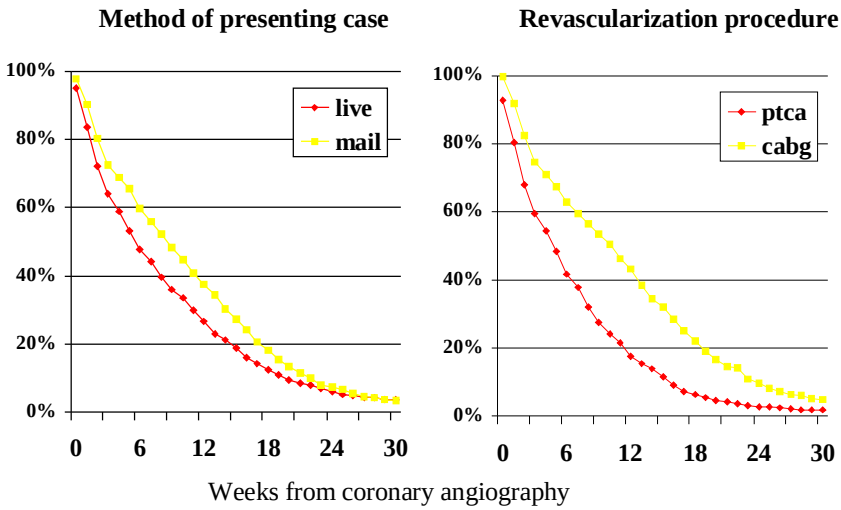
- ***Patient selection:*** We prospectively recruited a consecutive sample of 3981 patients referred for consideration of coronary revascularization to 10 heart centres in the Netherlands in 1992 as part of DUCAT (a prospective study of the appropriateness of use of coronary revascularization in the Netherlands). From this sample we identified 1840 patients who presented with chronic stable angina and were referred for percutaneous transluminal angioplasty (PTCA) or coronary artery bypass graft (CABG) surgery . We excluded 127 of these patients: 66 cases were judged inappropriate, 59 had missing data with respect to waiting time and 2 patients were outliers (i.e., their waiting times were 634 and 885 days). Our final sample consisted of 778 patients referred for PTCA and 935 referred for CABG judged not inappropriate by the European panel criteria.
- ***Data collection:*** We collected clinical information from the patient's medical record as well as information on how the patient's clinical data was presented at the meeting where the recommendation was made for revascularization: (1) 'direct' presentations occurred when the referring cardiologist or his/her representative attended the meeting; (2)'indirect' presentations occurred when the patient's clinical data was provided by telephone, letter or fax. We also assessed the waiting time for revascularization (i.e., the number of days between coronary angiography and the time the procedure was performed)
- ***Data analysis:*** We assessed the proportion of patients who underwent revascularization within the maximum recommended waiting time as defined by 10 of the 13 panelists.

RESULTS

Waiting time

- The average waiting time for chronic stable angina patients was 66 days.
- Patients referred for PTCA waited, on average, 35 fewer days than those referred for bypass surgery (47.6 vs. 83.0 days, p<0.001). [see figure below]
- Patients whose case was discussed during a direct presentation waited fewer days than those whose case was discussed "indirectly" (60.9 vs. 74.1 days, p<0.001)[see figure below]

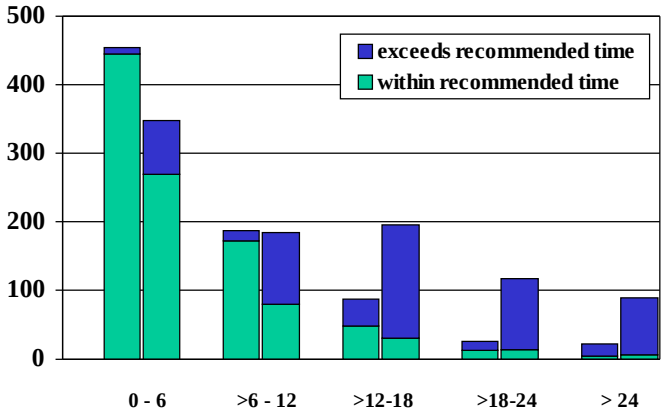
Proportion of chronic stable angina patients waiting for PTCA or CABG in the Netherlands in 1992 by:



Excessive waiting time

- 37% of cases were judged to have waiting times beyond the maximum time recommended by the multinational panel criteria.
- Fewer angioplasty patients had excessive waiting times compared to those referred for bypass surgery (12.6 vs. 57.1%, p<0.001) [see figure below]
- Patients whose case was discussed during a direct presentation were less likely to have excessive waiting times compared to those whose case was discussed indirectly (34.0 vs. 40.4%, p <0.01)

Waiting time of Dutch chronic stable angina patients for PTCA and CABG compared with the maximum time recommended by at least 10 of 13 members of a European expert panel



Weeks from coronary angiography to revascularization,
PTCA is left hand column; CABG right hand column

LIMITATIONS

- Panel ratings are from 1998 and Dutch data are from 1992, thus these findings may not reflect the current waiting list situation in the Netherlands.
- The definition used to define the maximum recommended waiting time will affect the proportion of cases judged to have an excessive wait.

CONCLUSIONS

- One-third of patients referred for coronary revascularization waited for periods longer than those recommended by a multinational panel.
- Although the multinational European expert panel considered only clinical factors in their model, this study demonstrates that non-clinical factors such as both the procedure the patient is referred for and the method of discussing the case among physicians contribute to differences in waiting time.
- Future work on developing waiting list criteria and analyzing waiting list management must consider the role of organizational or system factors in addition to the patient's clinical presentation.

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