



Tobacco and Vascular Surgery

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Background

Smokers have a higher risk of postoperative complications than non-smokers. When smoking cessation is initiated 4-6 weeks prior to surgery, postoperative complications are reduced significantly. Also smoking cessation on the day of surgery in orthopedic surgery has shown significant reduction in complications.

A trial assessing the effect of smoking cessation on the day of surgery in soft-tissue surgery has never before been performed. Therefore a randomized controlled trial was set up assessing this issue.

Studies

An observational cohort study using data from the Danish Smoking Cessation Database was set up to evaluate the effect of the Gold Standard Program (GSP) for smoking cessation on participants older than 60 years compared to the participants under 60 years. The participants over 60 years had a continuous abstinence rate of 37% after 6 months compared to an abstinence rate of 35% for participants under the age of 60 years ($p < 0.05$).

A logistic regression analysis showed that the independent factors affecting continuous abstinence rates were: living with another adult, prior professional recommendation, being compliant with program and being non-smoker at the end of the program. To evaluate the effect of smoking cessation on the day of surgery on postoperative complications, a randomized clinical trial was designed. The trial included patients undergoing peripheral vascular surgery and who were daily smokers. Patients were either randomized to at-

tend the GSP for smoking cessation or the standard care of the department. Postoperative complications after 30 days were recorded as were the patients smoking cessation rates after 6 weeks. We did not succeed in recruiting the number of patients pre-specified in the power calculation within a reasonable time period. Based on the limited number of patients we did include, we could not show any difference between the intervention and the control group, neither in postope-

orative complications nor smoking cessation.

To characterize the risk factors for developing a perioperative complication within 30 days after peripheral vascular surgery an observational cohort study was set up using data from the national Danish Vascular Registry.

We especially wanted to assess whether we could detect a significant difference in complication rate between smokers and former smokers. A total of 3202 open surgical procedures were identified between 2005-2012 at Rigshospitalet and Gentofte Hospital. There was an overall complication rate of 30% distributed as 19% wound complications, 6% surgical complications and 10% general complications. A multivariate regression analysis showed that the factors enhancing the risk for postoperative complications were; being an octogenarian, having known heart- or renal disease, being rated high ASA-score and being operated on in general anesthetics. No difference was found in complication rates between smokers and former smokers.

Conclusion

The elderly have a higher continuous abstinence rate – or at least not lower - than the younger participants in the GSP for smoking cessation. It is important for health professionals to inform on the hazards of smoking and ways to quit since this enhances the success for smoking cessation as well as optimizing the programs. This may significantly contribute to the compliance of the participants leading to a higher rate of abstinence at the end of the course.

If another RCT is to be set up assessing the effect of smoking cessation on the day of surgery in the vascular patient population, it is important to acknowledge the relatively low inclusion rate among eligible patients as well as to consider ways to ensure patient inclusion. It will probably be necessary to base such a trial on national participation as well as including other vascular patient groups than only peripheral surgery or even other patient groups undergoing soft tissue surgery.

Patients undergoing peripheral vascular surgery have a high number of postoperative complications of 30%. It is important to perform risk reduction when time allows reducing this risk. Some risk factors are non-modifiable and can only be taken into account in the greater picture, whereas heart- and renal disease are often modifiable, and optimizing the patients' health status when time allows is mandatory.

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This PhD is published as a supplement to the journal and will be available for download at www.clinhp.org/images/Mette_Kehlet_PhD_2015.pdf

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Clin Health Promot 2015; 5:54