**CO05 - WASTE REDUCTION IN CATARACT SURGERY, A SIMPLE CHANGE WITH GREAT IMPACT?**

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Introduction

Climate change is the biggest health threat of the 21st century and many changes have been implemented in order to tackle this issue. Healthcare, however, has been neglected and most procedures do not take into account their environmental impact. Cataracts are the leading cause of visual impairment, making cataract surgery one of the most common procedures performed worldwide. In Portugal, cataract surgeries have increased over 900% from 1993 to 2015, a trend that has likely continued in recent years.1 In Europe, according to Eurostat database, around 4 700 000 cataract surgeries were performed in 2017.2 Over half of emissions originating from cataract surgery are related to disposable medical equipment.3 Therefore, the reduction of disposable medical equipment will likely lead to the largest reduction in emissions and the biggest impact in sustainability. Our project consists of switching acetaminophen formulation from IV to PO as well as eliminating unnecessary fluids, a simple change that aims to minimize the carbon footprint of cataract surgery. The massive number of cataract surgeries multiplies the environmental impact of adopting changes that favour sustainability.  
  
Methods

The anaesthetic protocol when using the IV formulation of acetaminophen and IV fluids was weighted and compared to the same protocol but using the PO formulation of acetaminophen, without IV fluids. The difference in weight was used to estimate the likely reduction in waste associated with the adoption of the change proposed.

Results

The weight of the protocol when using the IV formulation of acetaminophen and IV fluids was 136.7g while using PO acetaminophen without IV fluids weighted 47.7g. An 89g difference between protocols, mainly composed of plastics associated with casing and tubing for administration of medication.

Discussion

In our hospital a total of 1877 cataract surgeries were performed in 2021. The results show a potential 167kg yearly reduction in plastic material, in our hospital alone. By extrapolating these results to all of Portugal, the change proposed in this project is likely to lead to a reduction in plastics of over 13 000 kg/year. When taking into account all of Europe, the reduction in plastics would be of about 418 000 000 kg/year. This reduction will of course lead to a significant decrease in emissions, since the production, transport and disposal of those plastics will be eliminated.

Conclusion

The environmental impact of surgical waste will not be sustainable as global surgery volume continues to increase. By switching the formulation of acetaminophen from IV to PO and removing unnecessary fluids, we can eliminate a number of plastics, and by doing so, we will reduce emissions associated with the procedure. This simple change has massive implications when taking into account the number of cataract surgeries performed worldwide and can most likely be adopted in other minor surgical procedures, further increasing its impact. With this project we also hope to show that small and simple changes can have an outstanding impact. Also, that healthcare professionals can make a difference when it comes to improving sustainability in healthcare.

References

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