#401 The Role of the Urologist in Reducing the Carbon Footprint Associated With Incontinence Pad Use.

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Introduction

Aim of study:

To advise about the environmental harms of incontinence pad use and to quantify the reduction in their use using three incontinence treating procedures as examples.

Hypothesis:

The hypothesis is that this work will encourage treatment for urinary incontinence and to reduce the environmental harm secondary to the use of incontinence products. The secondary objective is to contribute to reducing the impact of climate change and therefore the lives and wellbeing of incontinent people.

Conclusion

It is not possible to compare the carbon footprint of the operation to the pad use. But what we do know is that pads are invariably deleterious for the environment, and we have proven efficacious surgeries to reduce their use. Adopting strategies to reduce the footprint of those operations makes' operative intervention for urinary incontinence less harmful for the environment than pad dependence.

Climate change is an environmental and ethical emergency that will disproportionally impact incontinent people reliant on product use. Environmental disasters, climate related health conditions and resource scarcity are such ways which access to products may change in the future. Treatment reduces the need for single use products and helps to curb the carbon footprint and ecological harm from their use. Treating incontinence is an ethical choice benefiting both person and planet.

Study design and methods

An online literature search was completed to review the carbon footprint of incontinence pads. Lifecycle analysis of the product was explored, from raw material acquisition, manufacture, storage, transport, use and disposal. Evidence of the environmental harm associated with their use was reviewed. Surgical approaches to reducing or treating urinary incontinence were discovered via conventional educational texts, current literature, and expert surgical opinion. Three common urological incontinence surgical procedures have been investigated for their efficacy in reducing incontinence and quantified regarding reduction in incontinence pad use. Limitations of this study is that is does not differentiate from stress and urge incontinence.

Results- surgical options

Bulkamid- Urethral bulking agent
Reduced pad use from **4.1-1.8** daily
in women with stress incontinence. (1)

Botulinum toxin - Injected into detrusor
Reduced pad/ diaper use from **74.3 to 27.2** per month
in patients with urge incontinence (6)

Mid urethral sling
Reduced pad use from **2.4 to 0.001** pads daily. (7)
in women with stress incontinence

- Most resource intensive part of a hospital. (8)
- Hospital infrastructure, capital machinery, maintenance of the theatre environment (heating, ventilation, air-conditioning, lighting), electronic equipment energy, water, anaesthetic gases, pharmaceuticals, and reusable and disposable items. (9)
- Studies assessing C02 are unable to be compared: 6kg C02e (for cataract surgery in India) to 814kg CO_2e, (for a robotic : hysterectomy in the US) (10,11).
- Variables we do have control over to reduce the carbon footprint in the OT:
  - Choice of inhalational anaesthesia (13)
  - Optimizing Use of Consumable Items(12) choosing reusable Disposable or instruments.
  - Local anaesthetic or General anaesthetic to reduce and optimizing electricity use in theatres (12)
  - Streamlining surgical instrument trays through minimizing material. (12)

Results- pad use

Environmental harm from incontinence pad use

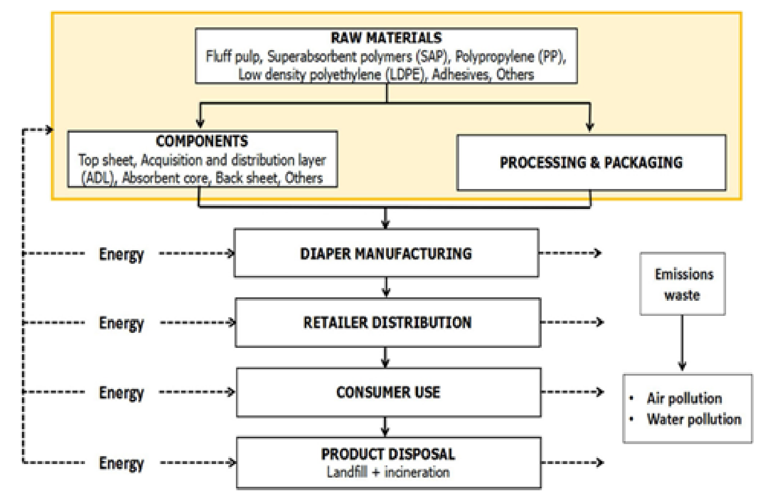
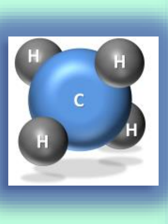
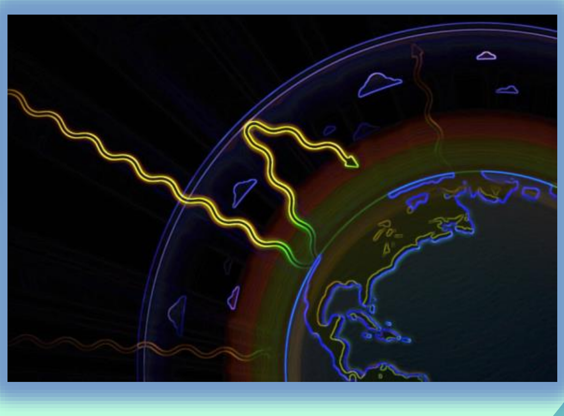


Fig. 3. Life cycle of the disposable diaper (adopted and modified from Cordella et al., 2015).

- Approximately 236 ml of crude oil is used in manufacturing each disposable diaper (2)
- It is estimated that it takes 500 years to biodegrade the (C3H3NaO2) derived from petroleum which makes up the plastic parts of the diaper (3)
- Disposed of in landfill which contributes to methane greenhouse gas (4)
- Methane is 25 times more potent a greenhouse gas than CO2 (5)





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