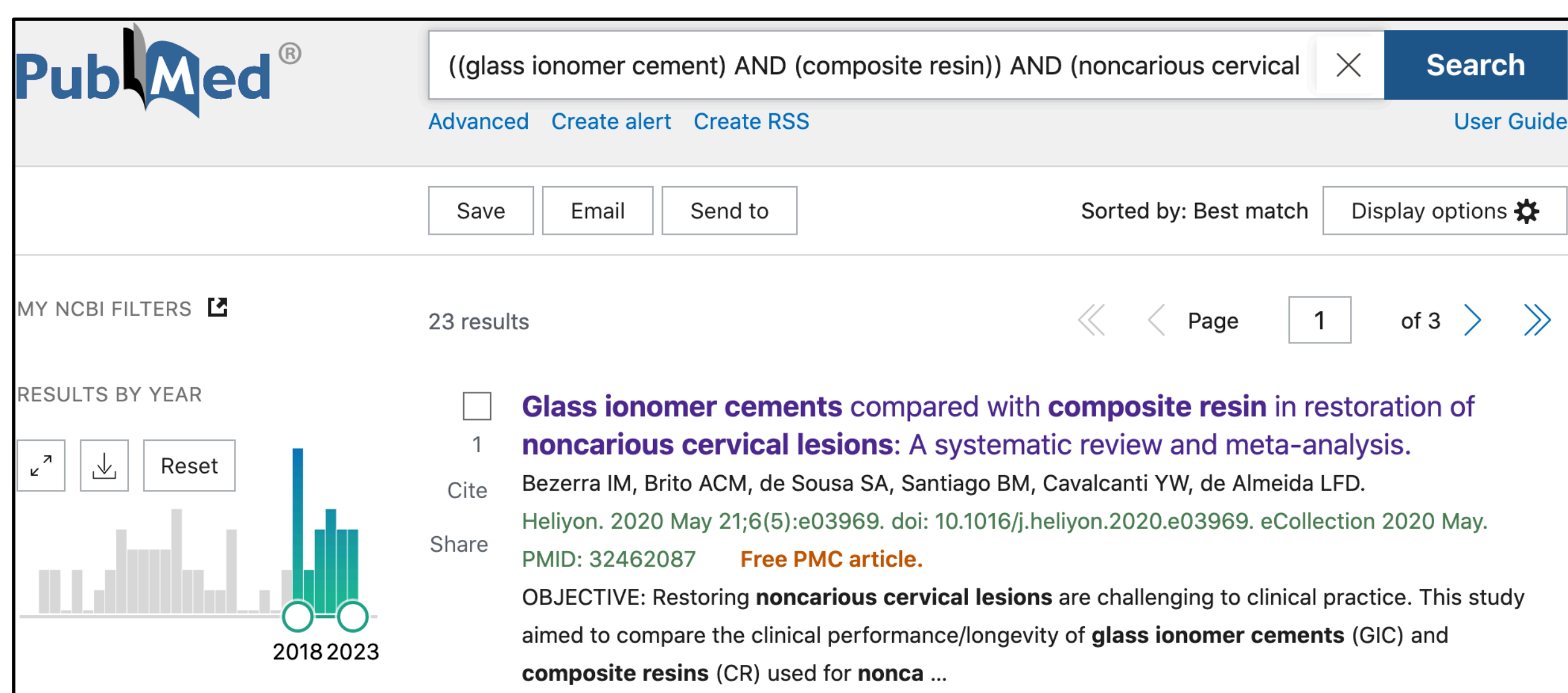


## INTRODUCTION

- Restoring non-carious cervical lesions poses multiple challenges to the clinician due to poor moisture control and due to various characteristics of available restorative materials.
- Each material has its own advantages and shortcomings but most commonly used materials are Glass Ionomer Cement (GIC), Resin Modified Glass Ionomer Cement (RMGIC), and Composite Resin.
- The aim of this poster is to use current literature in order to compare available materials in terms of various parameters.

## METHODS & MATERIAL

- Search strategy included PubMed database. The image below shows terms that were used in order to navigate through advanced search: ((glass ionomer cement) AND (composite resin) AND (noncarious cervical lesion)).



- Search criteria was further limited to articles from 2018 to 2023.
- Results yielded 16 articles, of which, articles were selected based on the evidence hierarchy with priority given to Systematic Reviews and Meta Analysis.
- After thorough review, three articles were chosen for this poster.

## RESULTS

- Only statistically significant difference between GIC and Composite Resin was retention with GIC showing better retention at 36 months follow up (Bezerra et al.)
- Both RMGIC and GIC show higher retention on all follow ups when compared to Composite Resin (Boing et al.)
- Resin Modified GIC demonstrated better marginal adaptation for restoring non-carious cervical lesions.
- Higher roughness was observed in the RMGIC/GIC when compared to Composite Resin in all follow-ups of the clinical studies evaluated.
- Color match was better with Composite Resin only in the 2-year follow-up when compared to GIC.

## CONCLUSION

- Given how similar all three materials are to each other, all three are clinically acceptable to use as restorative materials for non-carious cervical lesions.
- It is important to take into consideration that anterior teeth perhaps could take advantage of aesthetics by using composite resin.
- Similarly, longevity of the restoration is also important to take into account and perhaps posterior teeth could be better off with GIC or RMGIC.
- Patient's age, location and size of the lesion, etc. should be taken into account when deciding which restorative material to use.

## NONCARIOUS CERVICAL LESIONS



- Non-carious Cervical Lesions describes a condition where tooth structure is lost at or below the cemento-enamel junction due to forces other than decay.
- They can sometimes be accompanied by gum recession in the area as well.
- Depending on the depth of the lesions, sensitivity and/or pain may also be present.
- Three\* primary reasons:
  - abrasion: where the tooth structure is lost due to overly aggressive or improper tooth brushing technique.
  - abfraction: which creates the notches by placing stress on the teeth through grinding and clenching.
  - erosion: due to frequent consumption of acidic beverages.
- \*or a combination of all three above mentioned reasons.

## GLASS IONOMER CEMENT vs. COMPOSITE RESIN

- Composite resin is the most used material to restore non-carious cervical lesions due to their excellent esthetics and high strength as well as high wear resistance. However, resins are prone to polymerization shrinkage and high modulus of elasticity causing high stress due to occlusal load forces.
- Glass ionomer cements (GIC) have a modulus of elasticity similar to that of dentin and release fluoride making it a better material long term. However, GIC have less than optimal aesthetic properties because they are translucent and there are fewer color options. Moreover, GIC have less resistance to abrasion, increasing the surface roughness of these materials over time.
- Resin-modified GIC is GIC which has monomers of photopolymerizable resins added to it in an attempt to improve their mechanical properties.

Conventional Glass Ionomer	Resin-Modified Glass Ionomer Compomer	Composite
High fluoride release	←	Low fluoride release
Low strength	→	High strength
Poor esthetics	→	Excellent esthetics
Low wear resistance	→	High wear resistance

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