

Study 1

Further comparison of the ease of use of inhaler devices in people with and without rheumatoid arthritis

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Scientific Summary

Respiratory disease is a co-morbidity in ~16% of people with rheumatoid arthritis (RA) in the UK^[1]. Initial evidence suggests that only certain inhalers are appropriate for people with RA, as poor hand strength and dexterity prevent the majority of people from using certain devices^[2]. However, a number of commonly used inhalers have not been tested in this way, nor have compliance aids designed to assist inhaler use for people with RA. The aim of this project is to compare the usability of four additional inhaler devices and compliance aids, in age and sex matched groups of people with and without RA, and to assess whether they can achieve the necessary inspiratory flow rate. People with RA will be recruited via patient groups. Usability will be assessed using placebo inhalers; participants will be scored based on the number of inhaler use steps achieved. Inspiratory flow will be measured using the In-Check DIAL device. Primary outcomes will be the percentage of each group able to successfully use each type of inhaler and achieve the necessary inspiratory flow. Results will be related to RA history, activity and site to produce more detailed recommendations for the selection of inhalers for people with RA and the design of more easily used devices.

Lay Summary

Many people with rheumatoid arthritis (RA) use inhalers, because they also have lung diseases. Research suggests that people find some inhalers difficult to use, especially if RA affects their fingers. However, there are several common inhalers which have not been tested in this way. Some devices designed to make inhalers easier have also not been tested. The aim of this project is to compare the usability of four more inhalers and devices by groups of people with and without RA. The speed at which these groups can breathe in will also be compared. Members of RA patient groups will be invited to take part. The researcher will watch members of each group while they try to use dummy inhalers to see how many can do this. The speed at which they can breathe in through an inhaler will be measured using a device called the In-Check DIAL. The results of the two groups will be compared to see if people with RA find it more difficult to use certain inhalers. This will help health professionals chose the most usable inhalers with people with RA.

References

1. Dougados M *et al.* Prevalence of comorbidities in rheumatoid arthritis and evaluation of their monitoring: results of an international, cross-sectional study (COMORA). *Annals of the Rheumatic Diseases* 2014;73:62-68.
2. Kafei Shirmanesh Y, Jones MD. Comparison of the ease of use of four typical inhaler devices in people with and without rheumatoid arthritis (accepted). In: *Health Services Research and Pharmacy Practice*. Nottingham; 2017.