

Letter

Are alcohol gels better than liquid hand rubs?

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We read with great interest the study by Traore and coauthors, comparing an alcohol hand gel with a liquid hand hygiene formulation in an intensive care unit [1]. The authors reported better user acceptability for the gel. Compliance for both formulations was significantly better ($P=0.035$) when healthcare workers had easy access to hand rubs, but the difference in compliance between the gel and the liquid was not statistically significant.

We are concerned that readers may conclude that gels are generally better than and preferable to liquids. The abstract points out that the gel performed significantly better on skin tolerance parameters. Easy access, however, was the only significant predictor for compliance. The article also mentions 'superior acceptance' of the gel, but acceptability scores of 39.1 and 40 ($P=0.44$) were presented. Surprisingly, compliance was considerably lower compared with an earlier report from the same institution [2].

The two-phase study design may have biased the results, with the gel coming second and with improvements noted in the second phase. In any ongoing hand hygiene campaign, it is probable that compliance and acceptability will increase with time. Also, the second phase occurred during summer – a season less likely to cause dry, irritant skin.

Previous studies found that most liquid hand rubs present significantly better antimicrobial performance than gels [3], and the authors wisely chose a gel that meets the stringent EN 1500 standards. Many gels, however, do not meet these EN 1500 standards.

The authors are to be congratulated on publishing this study. We think that the data presented, however, do not allow such strong, general statements to be made in favour of gels. There may also be local preferences. For example, settings with long-standing usage of alcohol for hand hygiene (for example, many parts of Europe) almost exclusively use liquids, with no associated compliance and acceptability problems.

Liquids act more rapidly (~15 s) and leave less residual substance on hands. Gels require about 30 seconds to act, and time loss can reduce compliance [4]. The technique of rubbing is also important; some hand surfaces are often missed. Only liquids have been evaluated for staff training requirements and for surface coverage [5]. In conclusion, each institution should evaluate formulations based on local needs, taking antimicrobial activity into account. It may be useful to provide both gel and liquid, as the authors suggested.

Liquid or gel: hand rubbing at the point of care remains the most critical element of successful hand hygiene promotion

Didier Pittet

We share the concerns of Maiwald and Widmer regarding the possible interpretation of our study results, and agree that the results should not be used in favour of gels. In our study, compliance tended to be higher when the gel was in use but, most importantly, the most critical factor and strongest predictor of compliance was the standardised access to hand rub (liquid or gel) at the patient point of care [2,6,7]. Given the

excellent tolerance of both formulations and user preference, both liquids and gels are currently used in our intensive care unit in large amounts (~80 l/1,000 patient-days).

As emphasised, most liquid hand rubs have a significantly better antimicrobial efficacy than gels [3]. To merit publication, studies assessing the tolerance and acceptability of

hand rubs must imperatively use products that meet the most stringent criteria for antimicrobial efficacy (EN 1500 standards) [7], must use recognised evaluation tools, and must monitor user compliance in daily clinical practice. By comparing a liquid hand rub with its gel counterpart, and by using a gel that meets the EN 1500 standards, our study is unique. It fulfils all the criteria and, additionally, controls for major confounders of compliance [2,7]. We acknowledge several study limitations, including seasonal variation, and we recognise that research is needed in different geographical regions. Long-term monitoring of practices is also critical [7,8].

Compliance in this study cannot be compared with previous reports, including our own [2,6,7], for several reasons. In particular, the present study focuses on activities with a high risk of cross-transmission and was performed in a high-workload setting, both conditions being typically associated with an increased risk for lower compliance [2,6,7]. Further studies on the tolerance and acceptability of hand rubs that meet microbiological efficacy criteria are critical to the long-term success of hand hygiene promotion, a worldwide priority challenge for patient safety [7].

Competing interests

The authors declare that they have no competing interests.

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