GC G-Bond

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THIS paper describes the evaluation of the handling of a new one-bottle, self-etching light-cured adhesive system – G-Bond, manufactured and sold by GC (UK) Ltd, 22-23 Coopers Court, Newport Pagnell, Bucks. MK16 8JS (telephone 01908 218999, e-mail info@uk.gceurope.com, website http://uk.gceurope.com).

The evaluation was carried out by members of the PREP (Product Research and Evaluation by Practitioners) Panel, which has 27 members and has completed over 40 evaluations of dental restorative materials in the UK.

Methods

Members of the PREP Panel were contacted and asked if they would participate in this investigation. Of the 20 who responded positively, 12 were chosen at random for the evaluation. Two of the evaluators were female, their average time since graduation being 18 years, with a range of five to 37 years. Explanatory letters, questionnaires and packs of G-Bond were sent to the evaluators in July 2005. The practitioners were asked to use the material where indicated and return the questionnaire.

Results

All of the evaluators currently used a dentine bonding system, with a wide variety of systems being employed prior to the study. The principal reasons for the choice of their dentine bonding system were good results and ease of use.

Other reasons reported were good published data, infection control (single use dose), single application and excellent desensitisation.

The ease of use of the bonding system used prior to the evaluation was rated as follows:

Difficult to use — **Easy to use**
1 [4.2] 5

Evaluation of G-Bond

Evaluators rated the presentation of the product as:

Poor — **Excellent**
1 [4.4] 5

The evaluators rated the paper instructions as:

When the evaluators were asked to give their assessment and that of their dental nurses on the dispensing and handling of G-Bond liquid, the result was:

Inconvenient — **Convenient**
1 [4.6] 5

The viscosity of the bonding liquid was rated by the evaluators as:

Too viscous — **Too thin**
1 [3.0] 5

Nine of the evaluators stated that the G-Bond liquid "stayed in place" when placed on the tooth surface, which was considered to be an advantage.

Eleven felt that it was an advantage of G-Bond, over other systems using phosphoric acid, in not having to wash off etching liquid.

When asked to compare the application of G-Bond liquid to the application of other resins previously used, the result was:

Better	eight evaluators
Less messy	four evaluators
Similar	two evaluators

One other comment: "Liked the 10-second cure time – less chance of contamination and quicker." All of the evaluators stated the one-component aspect of G-Bond was an advantage over two-bottle self-etching bonding systems. When the evaluators were asked if G-Bond was faster or slower than the bonding system normally used, the result was:

Faster	9
Same	3
Slower	0

All of the evaluators stated that they would purchase the material if available at average cost. Quotes: "I have already purchased G-Bond!" and "I've just ordered some more". Comments made by the evaluators when asked if there were any changes considered essential to the acceptability of G-Bond included: "I think it would be better in a single use application rather than a bottle"; "no, but it would be nice to see how much is left in the bottle but appreciate problem with light".

When the evaluators were asked to rate the ease of use of G-Bond, the result was:

Difficult to use — **Easy to use**
1 [5.0] 5

Final comments from the evaluators included: "would like to review the restorations long-term to assess success" (four); "takes a little getting used to – I still like to etch the enamel"; "didn't make the soft tissues bleed as some self-etching materials do"; "fantastic material – very easy to use. No post-op sensitivity and composites immediately 'tack' to the surface"; "liked the yellow colour"; "very effective for desensitising dentine – worth buying for that alone!"; "miss using the bond resin on a microbrush to allow manipulation of resin during placement of large restorations"; "best single bond (non-etch) used to date"; "very good system – only concern is possible cross-infection with a multiple-use system"; and "fast – great for children's fillings".

Discussion and conclusions

The G-Bond system has been subjected to an extensive evaluation, in general dental practice, by 12 members of the PREP Panel in which 697 restorations were placed. Based on this, the following conclusions may be made:

1. The presentation of the material, the paper instructions and the laminated instructions all scored very highly.
2. All of the evaluators stated that the dispenser was easy to use, and the bonding liquid scored highly for dispensing and handling.
3. That the material was well received is indicated by the high scores achieved throughout the evaluation as well as a maximum score (5.0) for ease of use (the first 5 rating ever achieved in a PREP Panel survey) when compared to the pre-evaluation dentine bonding systems (4.2 on a VAS where 5.0 = easy to use and 1 = difficult to use).
4. Also, the statement that all 12 evaluators would purchase G-Bond endorses the most favourable reception of this product.

Practice-based research

The PREP Panel says there are many reasons why dental practice increasingly should become the prime location for clinical dental research, as opposed to dental hospitals or other academic institutions.

Dental practice is the real world, and accordingly, if a technique or material is to be successful, it must be readily operated in the dental practice situation.

Manufacturer's comments

GC Corporation invests a huge amount of resource into the development of new products, so much so that the GC logo boasts that "First is Quality". Although GC is known within the UK as the market leader in glass ionomer technology, from a global standpoint we would consider ourselves to be a research-based company innovating and developing in all different fields of dental materials. With this in mind, it is poignant to listen to the comments of evaluators when launching a new product. This is why we chose Professor Trevor Burke's PREP Panel to carry out such a task.

After reading through the results of the PREP Panel's evaluation of G-Bond, I would like to comment that the speed of evaluation and written reporting was very good and from a company perspective the feedback from the evaluators was excellent.

The excellent rating given by the PREP Panel's assessors has proved to be of great commercial value to GC Europe and the bar chart diagrams used to highlight performance are very useful for a quick reference guide for field representatives when questioned by GDPs.

It is of great benefit to us to be informed by evaluators of the further uses for the material and this was the case with G-Bond in respect to dentine sensitivity cases. It is also encouraging to know that your independent evaluators were all unanimous in their comments that, given the choice, they would purchase the product tested.

In conclusion, I am delighted with results from this "first look" appraisal.