In the case of the 1% Diprivan injection kit (propofol; manufactured by AstraZeneca United Kingdom, Alderley Park, United Kingdom, imported and marketed by AstraZeneca K.K. Pharmaceuticals, Osaka, Japan), the piston has the thickest rubber wall among the four products and contortion hardly occurs, and the male screw threads of the piston engage with the female screw threads molded on the top portion of the plunger (fig. 2). A piston with a thick rubber wall is less likely to contort during use. However, the engineers of Kyowa Hakko Kirin and Terumo indicate that the thick wall may affect internal syringe compliance, influence the force needed to operate the plunger via a syringe pump, and may be associated with irregular drug delivery.4

We recommended that manufacturers provide a preassembled prefilled syringe with an integrated plunger/piston unit. However, the engineers indicated the following drawbacks of a preassembled prefilled syringe with an integrated plunger/piston: 1) Pressure may be exerted on the plunger during a fall or transportation of the syringe; 2) when the top film is peeled only partially during removal of the syringe, the finger grip may be caught by the film, resulting in tilting of the plunger with respect to the axial line of the barrel, which may cause plunger/piston misassembly; 3) the length of the whole unit becomes longer, posing problems in storage, transportation, and handling; 4) the manufacturers should apply to the Ministry of Health, Labor, and Welfare for changing a part of the original design, and approval will take more than 1 yr; and 5) the syringe pump structure may have to be modified to accommodate the newly arranged syringes. Based on these issues, Kyowa Hakko Kirin and Terumo indicate that the thick wall may affect internal syringe compliance, influence the force needed to operate the plunger via a syringe pump, and may be associated with irregular drug delivery.4

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**References**


(Accepted for publication October 8, 2009.)

**In Reply:**

AstraZeneca would like to comment on the correspondence from Dr. Amagasa.

As pointed out in the article, the cause of the original failure is effectively down to poor assembly of the Prefilled INOVAN syringe. A key way to avoid this issue is for the users to always refer to the assembly instructions provided by the manufacturer. AstraZeneca provides clear and easy to follow assembly instructions on the 1% Diprivan Prefilled syringe exterior carton and interior tear-off lid on assembling the plunger rod to the rubber piston before use.

AstraZeneca also points out that the design of the thick wall impacting on the operation of the 1% Diprivan Prefilled...
Preoperative Electrocardiograms

To the Editor:

We read with interest the recent article by Correll et al. about the use of preoperative electrocardiograms. The authors identified five clinical variables that constitute an independent risk factor for the presence of major electrocardiogram alterations. These variables could refine the criterion for preoperative electrocardiograms ordering.

We also believe that in patients with a family history of premature sudden death (< 35 yr of age at death), preoperative electrocardiogram should be considered. In fact, there is a familial cardiomyopathy, known as arrhythmogenic right ventricular dysplasia or cardiomyopathy, which is the major cause of sudden death in the young and athletes. Although arrhythmogenic right ventricular dysplasia or cardiomyopathy is quite a rare heart disease, it seems that it is also one of the main causes of sudden unexpected perioperative death. In one series, among 50 forensic autopsies performed after perioperative death, arrhythmogenic right ventricular dysplasia or cardiomyopathy was detected in 18 patients. All these patients were young (< 65 yr), with no previous cardiac history and underwent relative low-risk surgery. At least 50% of patients with arrhythmogenic right ventricular dysplasia or cardiomyopathy have an abnormal electrocardiograph at presentation, but within 6 yr of diagnosis, virtually all patients will have one or more of the following findings during sinus rhythm: complete or incomplete right bundle branch block, QRS prolongation in the absence of right bundle branch block, epsilon wave in leads V1–V2, T-wave inversion in leads V1–V3, and delayed (i.e., ≥ 55 ms) S-wave upstroke in leads V1–V3.

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References


The above letter was sent to the authors of the referenced report. The authors did not feel a response was required.—James C. Eisenach, Editor-in-Chief

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