

About the efficiency of persistent antibacterial sprays.

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【Purpose】

- To verify hygienic and economic efficiency of persistent antibacterial sprays.
- To report about definite positive effect on management of hygiene around beds in dialysis rooms.

【Method of measurement】

Specimen	Pacific Beam MOLD (PBM) Commercially available antibacterial spray Benzalkonium chloride
Place of measurements	Patients' pillows, mattresses, and staff gowns
Tests of direct antibacterial effect	Before spraying, 30 minutes, 1, 4 and 6 hours after spraying
Tests of persistent antibacterial effect	24, 48, 72, 96 and 120 hours after spraying
Verification of economic effect	Calculation of dependence between persistent antibacterial effect and number of sprayings.

【Method of measurement】

Area of spraying and amount used

Sprayed 4 cc onto 20 cm² area from the distance of 30 cm

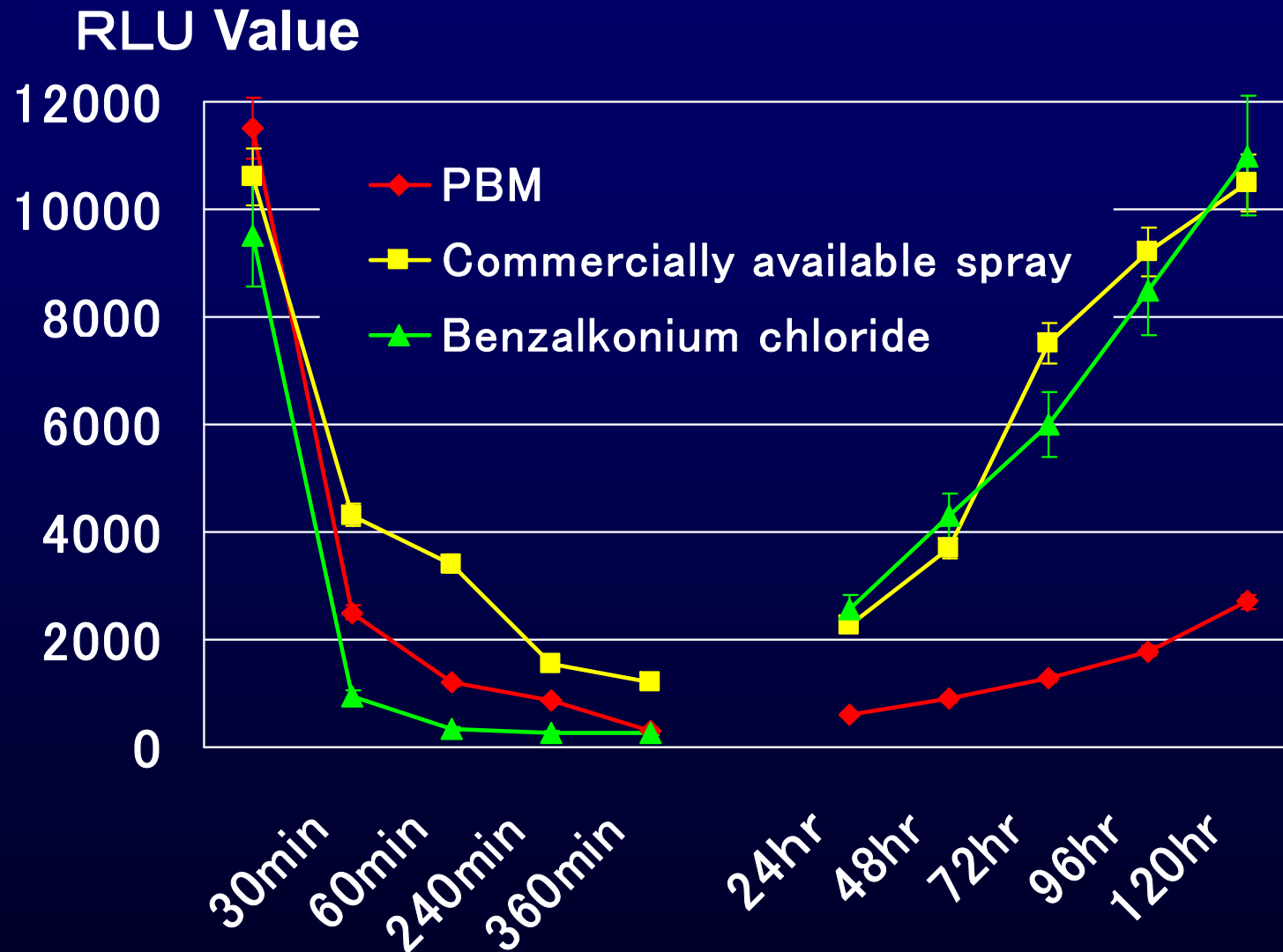


Method of measurement

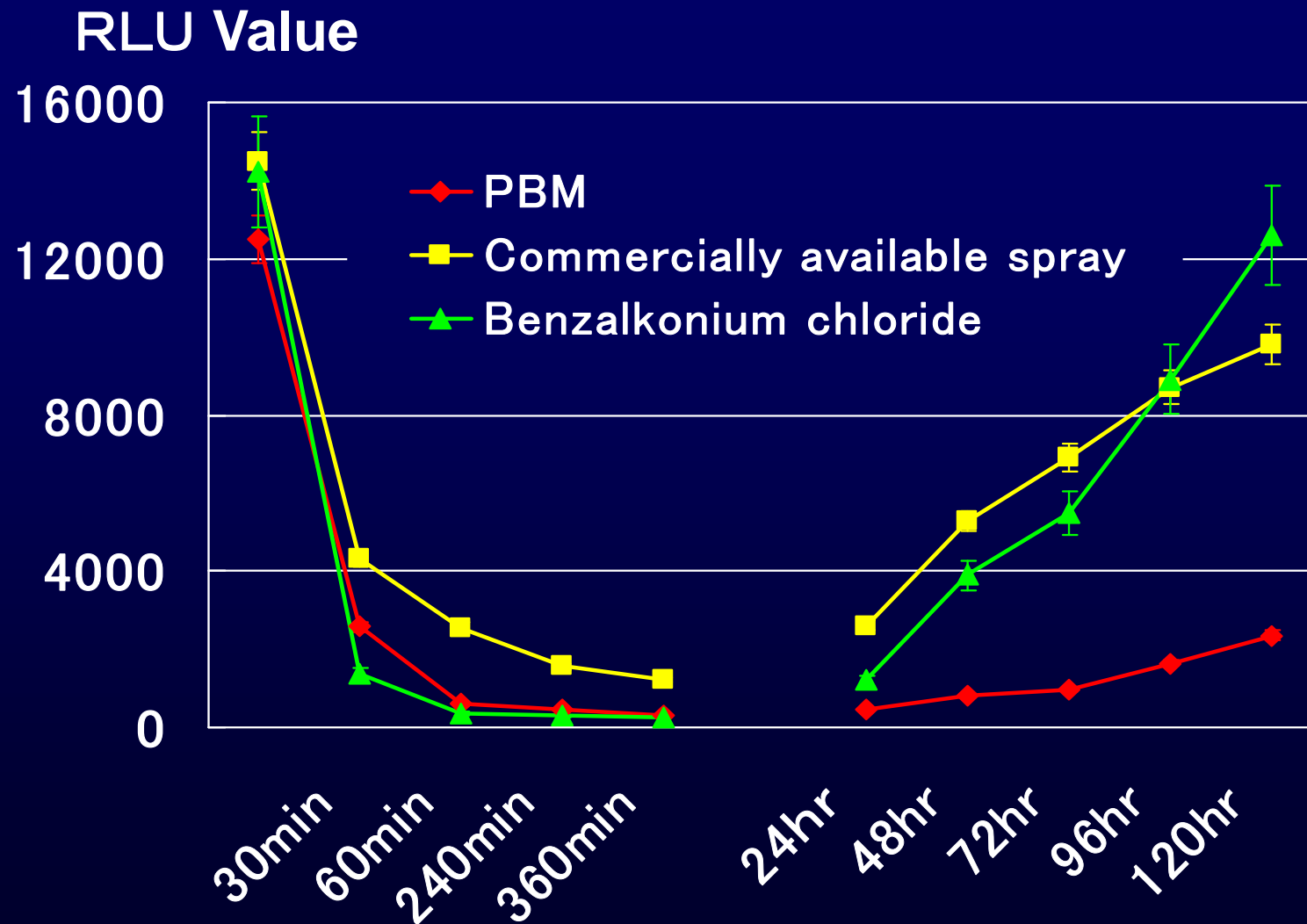
Measure ATP concentration decrease with luminometer
(produced by Kikkoman company)



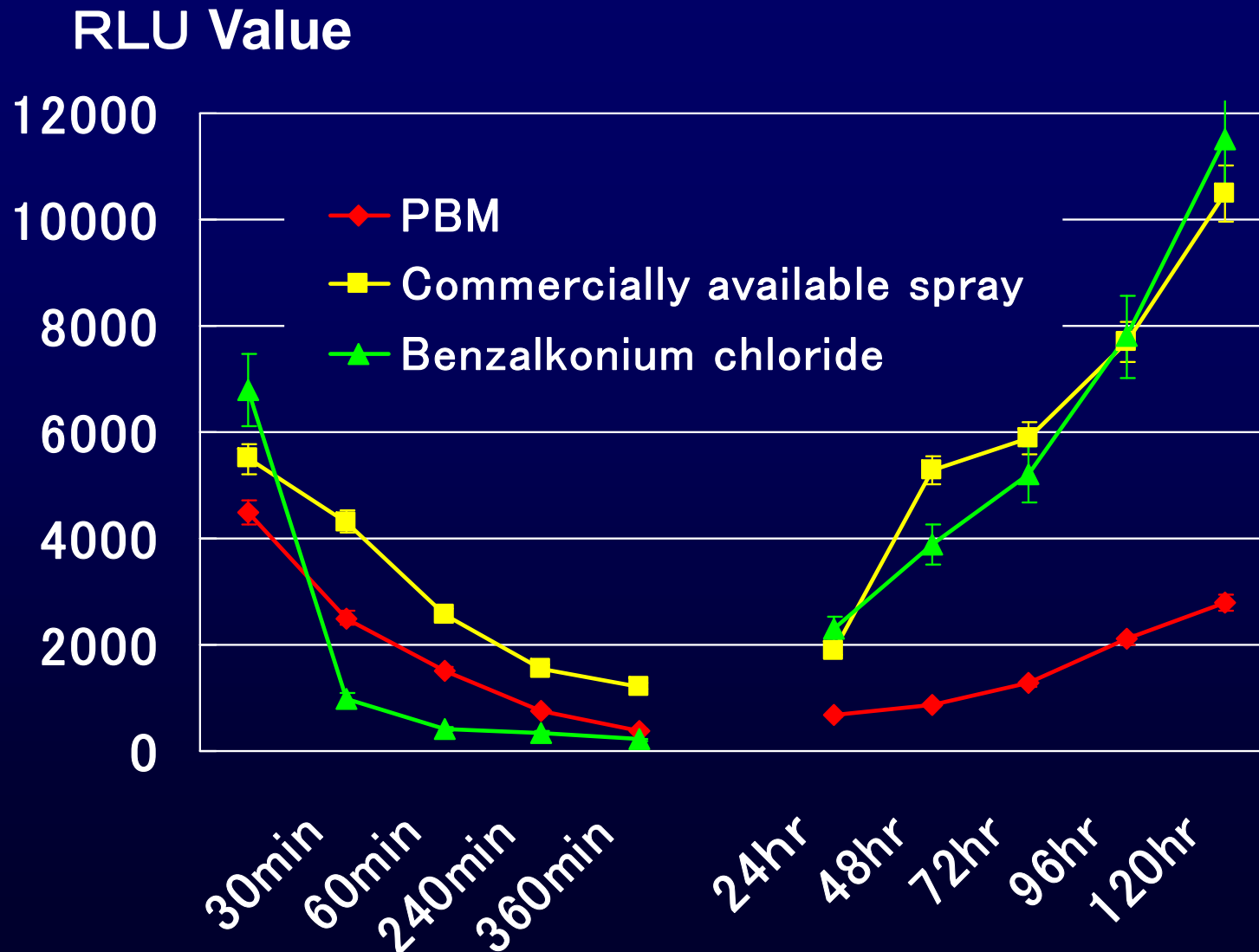
Direct and persistent antibacterial effect on pillows



Direct and persistent antibacterial effect on mattresses



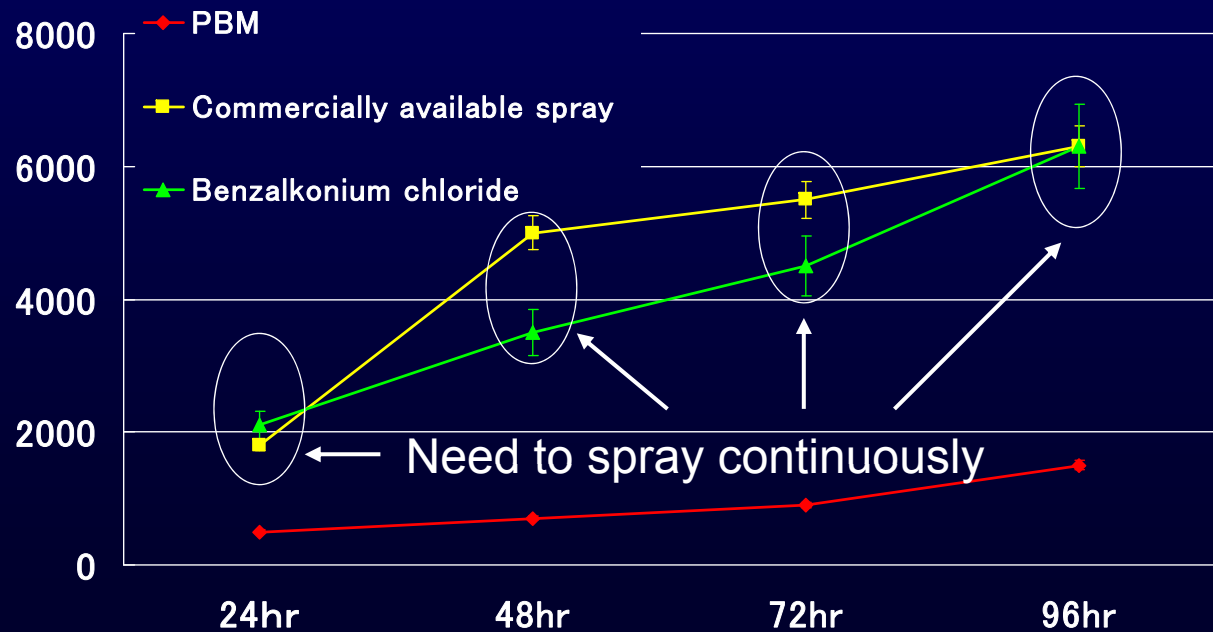
Direct and persistent antibacterial effect on staff gowns



【Comparison of economic effects】



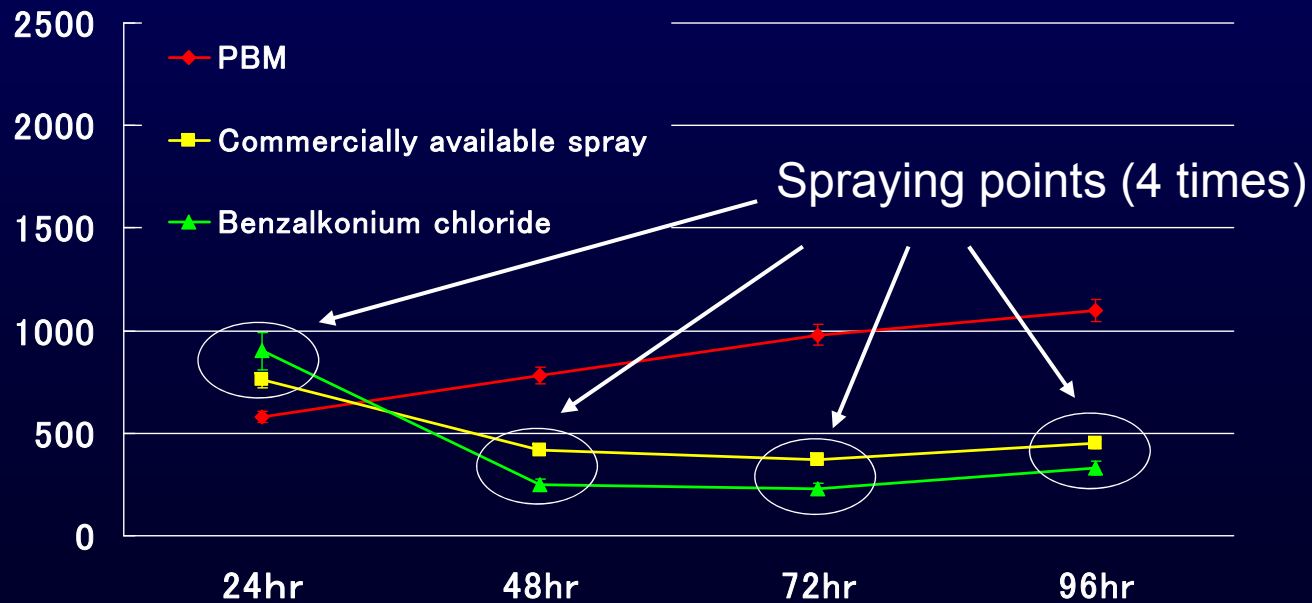
Cleanness rank	I	II	III	IV	V	VI	VII
RLU value	<300	301 ~ 500	501 ~ 1000	1001 ~ 2500	2501 ~ 5000	5001 ~ 10000	10001 ~ 25000



【Comparison of economic effects】

Clean ← Cleanness rank → Dirty

Cleanness rank	I	II	III	IV	V	VI	VII
RLU value	<300	301 ~ 500	501 ~ 1000	1001 ~ 2500	2501 ~ 5000	5001 ~ 10000	10001 ~ 25000



【Results】

- Antibacterial effect was almost the same in all tests during first 6 hours after spraying.
- When testing persistent antibacterial effect, rapid bacterial growth was detected after 24 hours from spraying the commercially available spray and benzalkonium chloride. After spraying the PBM bacterial growth remained slow in the same time.
- Economic effect. It was determined that the PBM can be sprayed once per 96 hours to achieve necessary antibacterial effect. On the other hand, both commercially available spray and benzalkonium chloride must be sprayed once per 24 hours to achieve the same effect. Thus, despite market price difference PBM proved to be more cost-effective.
- Persistent antibacterial effect from one spraying allows to keep staff labor efforts on minimal level.

【Conclusion】

- Direct and persistent antibacterial effect of PBM is especially useful for pillows and mattresses which are hard to wash.
- It is possible to minimize the cost of hygiene control by spraying pillow covers, sheets, sphygmomanometer cuffs, and staff gowns which are proven to be the places of high bacterial growth.