SUPERABSORBENT DRESSINGS FOR EXUDATE CONTROL

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INTRODUCTION

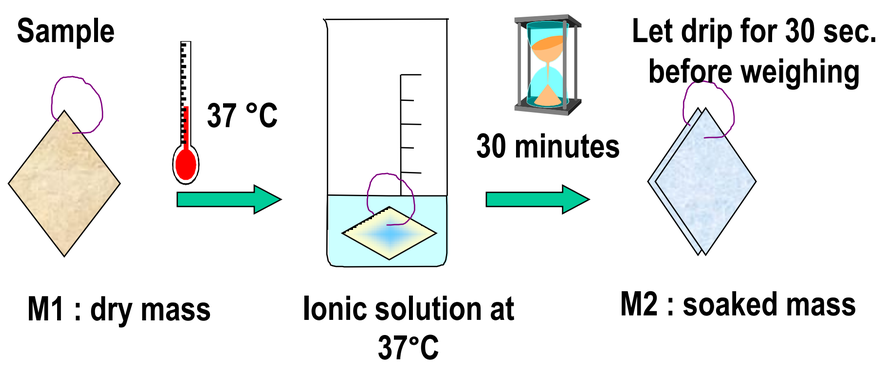
Different dressing types are used for the management of highly exuding wounds: Traditional absorbent pads on the basis of cellulose or cotton (PAt), or moist wound healing dressings, such as alginates and hydrofibres. The dressing should enable absorbtion of large quantities of exudate under pressure (compression bandaging, patient's weight) to prevent leakage, causing peri-lesional skin maceration.
NF EN 13726-1 is a test method used in France for primary wound dressings to evaluate absorption capacity. Currently, exudate retention under pressure, is not yet subject to any standard.

OBECTIVE

Compare the properties of a *superabsorbent (PsA) dressing with polyacrylate particles (SAP), looking at: absorption and retention properties; retention capacity under pressure versus the performance of alginates, hydrofibers, foams and a standard absorbent dressings (PAt).

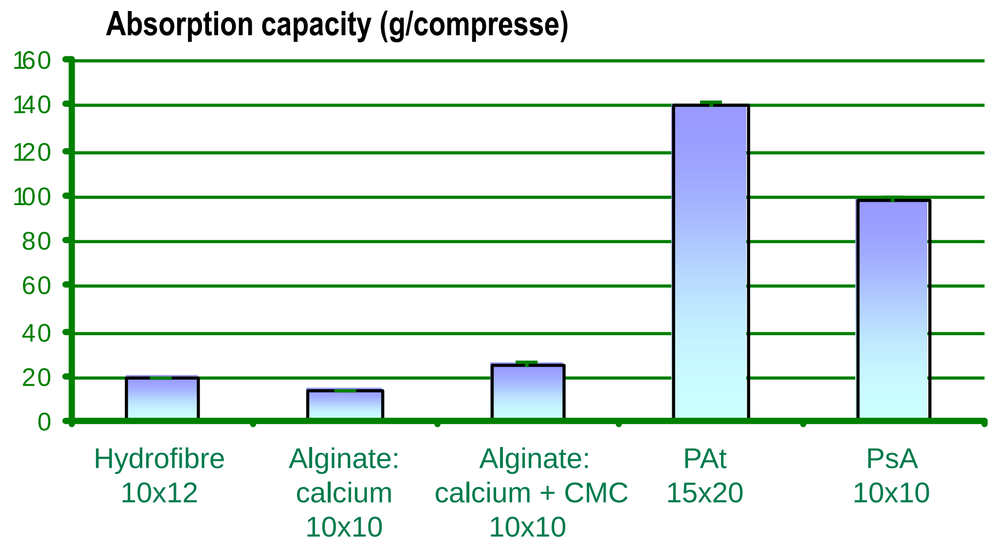
ABSORPTION CAPACITY

Method : Standard 13726-1 : absorption capacity without pressure



M_2-M_1 = Absorption capacity (g/compresse)

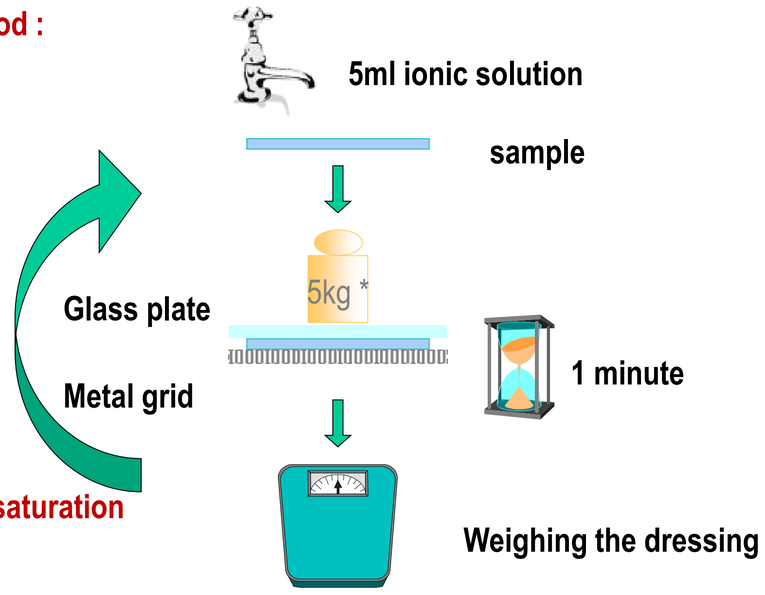
Results :



Although the surface is 3 times smaller (100 cm^2/ 300cm^2) than for the PAt, the *superabsorbent dressing demonstrated an almost equal absorption capacity. Referred to the surface per unit, the absorption capacity of the *superabsorbent dressing doubles: 0,98 / 0,47 g/cm^2. To achieve similar absorption for the same area (100cm^2), 5 alginates or hydrofibers are required.

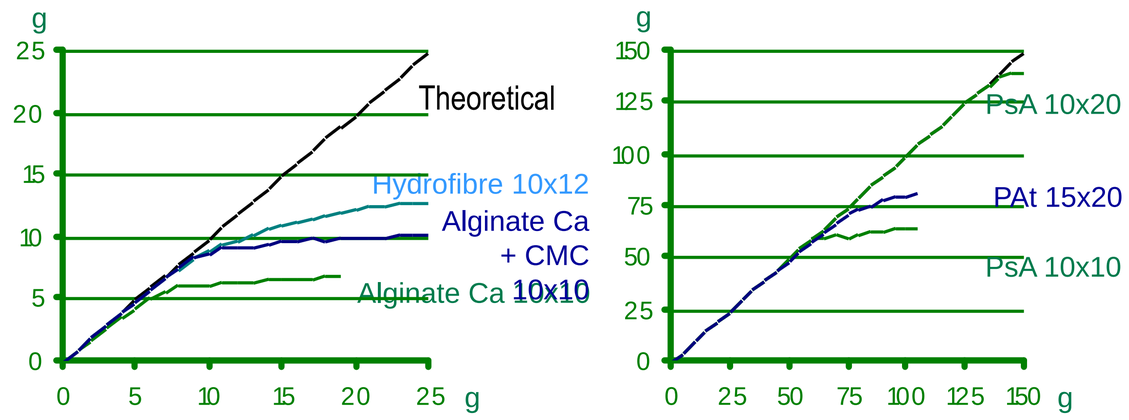
ABSORPTION CAPACITY UNDER PRESSURE

Method :



*Load 5Kg ⇆ 40 mmHg compression therapy

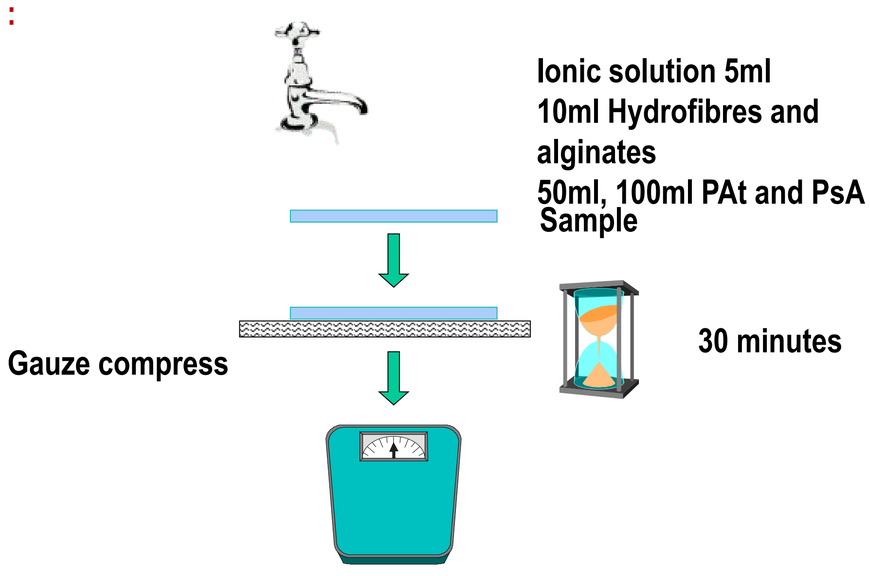
Results :



The more the dressing line gets far from the theoretical line, the more the dressing releases ionic solution under pressure. The *superabsorbent dressing closely follows the theoretical line up to saturation, indicating absence of leakage.

MOISTURE TRANSMISSION

Method :

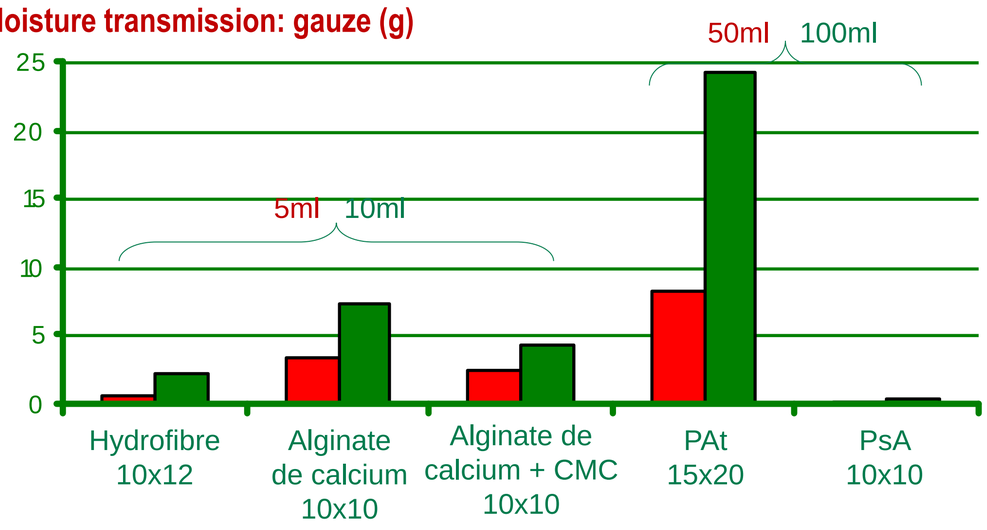


Weighing the gauze before (M_1) and after 30 minutes (M_2)

$M_2 – M_1$ = moisture transmission of gauze compresses (g)

Results :

Moisture transmission: gauze (g)



Unlike other absorbent dressings tested that transmitted a high moisture quantity, the *superabsorbent dressing fully retained the absorbed moisture.

CONCLUSION

Easy realising in vitro tests show that the *superabsorbent dressing is caracterized by a high absorption capacity, much higher than other commonly used dressing on exsudative wounds, and especially by an absence of leakage under pressure. These properties position the *superabsorbent dressing as a solution for highly exsuding wounds.

*PsA : *VLIWASORB® ; Pat : ZETUVIT® ; Hydrofibre : AQUACEL® ; Alginate de calcium : ALGOSTERIL® ; Alginate de calcium + CMC : URGOSORB®*

Scientific grant of Lohmann & Rauscher GmbH, Rengsdorf, Germany

AIUC conference, Ancona, Italy: September 21 – 24/2011