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عنوان المحاضرة باللغة الانجليزية	Tablet preparation
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المصادر والمراجع	The Theory and Practice of Industrial Pharmacy by Leon Lachman

محتوى المحاضرة

Tablet is a unit dosage form of medication containing one or more medicinal agents, with or without diluents, made by molding the mixture in the form of a fine powder, or compressing it in the form of a granular powder into a suitable shape.

Excipients used in tablet formulation:

Diluents: lactose, sucrose

Binder and adhesives: acacia, gelatin

Disintegrants: starch

Lubricants, anti-adherents, glidants: stearic acid, talc

Colors, flavors, sweeteners

Methods of preparation:

Direct method: the simplest with fewer steps of preparation and cost, but not suitable only for few compounds, e.g., sodium chloride.

Indirect method:

A- Dry method: for compounds affected by heat and moisture, the binder is added in dry form, then compression of formula to large tablets "slugs", then broken down to granules.

B- Wet method: the binder is added as solution, suspension, slurry to the powder mixture for granulation purpose.

Processing Step	*Wet*	*Dry*	*Direct*
Raw material	X	X	X
Weigh	X	X	X
Screen	X	X	X
Mix	X	X	
Compress (slug)		X	
Wet mass	X		
Mill	X		
Dry	X		
Mill	X	X	
Mix	X	X	
Compress	X	X	X

Advantages of using granules:

Increase the bulk density of powder mixture.

Improve flowability.

Improve mixing homogeneity and reduce segregation.

Improve the compactability of mixture.

Experimental work:

Preparation of sodium bicarbonate tablets by wet granulation method

Sodium bicarbonate	**250mg**
Lactose	**200mg**
Starch	**20mg**
Acacia mucilage 20%	**q.s**
Sodium stearate	**8mg**

prepare 40 tablets

Procedure:

Prepare the binder solution

Mix the ingredients together without the lubricant in a mortar, then add binder solution drop by drop until a paste will be formed (check by ball test)

Pass the paste through a sieve (6-8 mesh size) to get granules

Dry the granules then homogenize

Calculate the amount of lubricant which should be added to the formula

Real number of tablets = $\frac{Wt.\ of\ granules\ after\ homogenization}{Wt.\ of\ each\ tablet}$

Calculate the Wt. of binder added for 40 tablets
for example 10ml binder solution has been used:
10 ml /40 tablet = 0.4 ml for each tablet
the binder used as 20% solution, so in 0.4 ml it contains 0.08 gram (80mg) of acacia

Wt. of each tablet = 250+200+20+80= 550mg

After obtaining the real no. of tablet, multiply by amount of lubricant

Mix the amount of sodium stearate with the prepared granules for not more than 3-5 min.
then compress by tablet machine.