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Immunohistochemistry in under resourced laboratory

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It began in nineteen forties when Marrack produced antigens against cholera and typhus using red stain conjugated to Benzidine tertaedro. There was rapid growth of immunohistochemistry in nineteen sixties when Nakane introduced enzymes as marked antibodies. This took immunohistochemistry to broader base as these could be interpreted using light microscopy and the requirement of fluorescence microscopy was not needed. There were series of development of unlabeled antibodies like Peroxidase-Antiperoxidase by Sternberger, alkaline phosphatase anti alkaline phosphate (APAAP) by Masson, et al. that expanded application of immunohistochemistry. It was during this period when diaminobenzidine molecule (DAB) got its use for the first time as conjugate in immunohistochemistry which is used till date as a chromogen for peroxidase. The next development was the discovery of antigen retrieval methods by Huang, et al. and secondary antibody detection methods by Hsu, et al. which made application of immunohistochemistry in fresh specimens. Immunohistochemistry plays a pivotal role in pathology and is referred to as 'Brown revolution' of histopathology. Immunohistochemistry involves two steps: a) Preparation of slide-This includes tissue processing, embedding, sectioning, antigen retrieval, non-specific site block, endogenous peptide block, primary antibody incubation and detection. b) Interpretation of slides. Immunohistochemistry is a relatively simple technique but its ability to resolve issues depend on experience of hands that perform it and eyes that interpret the results. Although a wide variety of protocols for standardizing the immunohistochemistry technique are being proposed individual laboratories must establish a standardized procedures, validate their findings. In a developing country where we need to maintain a balance between patient need and affordability it becomes important for laboratories establishing immunohistochemistry protocols to take baby steps without compromising the quality and spending economically. Regular update of immunohistochemistry markers with new data is essential as it is a dynamic ever growing field. The interpretation of immunohistochemistry expression is done by qualitative presence or absence of brown staining. All brown staining are however not positive as one must be aware of location of target molecule nuclear or/and cytoplasmic while reporting the result. Each laboratory should standardize their procedures for IHC to establish this core stone facility.